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Truma Heating System and Air Flow

The Swift Group undertakes considerable testing of our products in cold chambers to ensure they meeting the BS EN 1649 Grade 3 standard and are useable in cold temperatures. During this testing, the air flow on the blown air outlets (S3004 space heater and Combi Heaters) is defined and set by us. In some cases, customers may wish to alter this setup to achieve a different heating pattern (i.e. more hot air to the rear of the vehicle or vice-versa) and this can be achieved by altering the diverter flap (S3004 heater) or by placing restrictors in the blown air system (Combi units).

Customers should seek the advice of Truma or their Dealer on how to do this

Equipment Specification

For details on type of equipment fitted in your motorhome, please refer to the Sales Brochure or Dealer.

Note: In all cases the electric (230v) heating system is designed to supplement the gas heating system. For quick / efficient / prolonged heating gas must be used.

IMPORTANT

To maximise the use and life of all fitted equipment in your motorhome it is essential that any accompanying manufacturers' literature is read fully. All recommended maintenance and preparation procedures should be followed. The information provided in this handbook is only intended as a guide. If in any doubt consult your manufacturer appointed dealer, particularly before attempting to install EXTRA EQUIPMENT.

Notice: In the interest of safety, replacement parts for an appliance shall conform to the appliance manufacturer's specifications and should be fitted by them or their authorised agent.

TRUMA ULTRASTORE WATER HEATER OPERATING INSTRUCTIONS

Attention: Before using for the first time, it is essential to flush the entire water supply through with clean warm water. Always mount the cowl cover when the water heater is not being operated! Drain the water heater if there is a risk of frost!

There shall be no claims under guarantee for damage caused by frost!

When connecting to a central water supply (rural or city connection) or when using more powerful pumps, a pressure reducer must be used which prevents pressures of greater than 2.8 bar occurring in the Ultrastore.

Filling the Truma Ultrastore with water

e = Lever position 'Closed'

f = Lever position 'Drain'

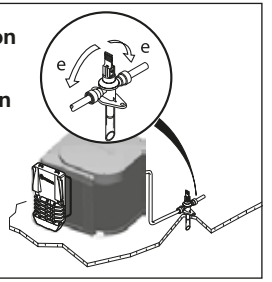


Fig. 1

1. Check that the drain valve in the cold-water intake is closed. Lever should be in the horizontal position (e).
2. Open the hot tap in the bathroom or kitchen with pre-selecting mixing taps or single lever fittings set to hot.
3. Switch on power for water pump (main switch or pump switch). Leave the tap open to let air escape while the water heater is filling. The heater is filled when water flows out of the tap.

   Note: residues of frozen water can prevent filling if there is a frost. The water heater can be defrosted by switching on the heater for a short period (max 2 mins). Frozen pipes can be defrosted by heating the room.

Note: If just the cold water system is being used, without water heater, the heater tank is also filled up with water. Therefore, order to avoid damage through frost, the water contents must be drained by opening the drain valvewhen the system is no longer in use.

Draining the water heater

1. Disconnect power for water pump (main switch or pump switch).
2. Open hot water taps in bathroom and kitchen.
3. Open safety/drain valve: Lever in vertical position, (Fig. 1) position (f).
4. The water heater is now drained directly to the outside via the safety/drain valve. Check that the water contents have been completely drained (10 litres).

Gas operating instructions

Attention: Never operate the water heater without water in it!

1. Remove cowl cover.

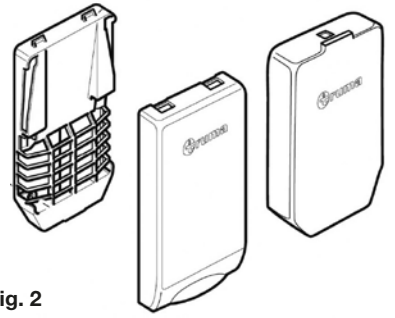
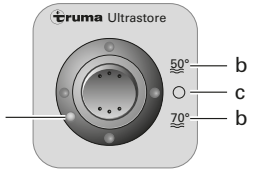


Fig. 2

2. Open gas cylinder and open the gas shut off valve at the manifold.
3. Turn on the heater by moving the central rocker switch to the 50ºC or 70ºC position as desired. (Fig 3).

Fig. 3



a = Red LED "Failure"

b = Water heater "On" 50 °C or 70 °C

c = Water heater "Off"

4. After 5 seconds clicking sound will be heard from water heater, as boiler attempts to light

   Outer collar (a) in control module will turn Red if boiler fails to light - If boiler does fail to light, turn switch back to central position (c), wait 5 minutes, and then repeat step 3.
5. If there is air in the gas supply line, it may take up to a minute before the gas is available for combustion. If the appliance switches to "Failure" during this period, switch off the appliance - wait 5 minutes - and switch on again!

Switching off (gas operation)

Switch off the water heater by moving the rocker switch to the central position. (Fig 3).

Drain the water heater if there is a risk of frost!

If the water heater is not to be used for a longer period, mount cowl cover and close the heater gas shut off valve at the manifold.

There shall be no claim under guarantee if this point is not observed.

Always remove the cowl cover prior to operating the water heater!

Red indicator lamp "Failure"

The red indicator lamp (d) lights up if there is a failure.

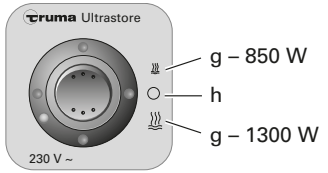
The reason for such an indication is, for example, no gas available or air in the gas supply system, triggering of the excess temperature monitor etc. To unlock, switch off the appliance, wait 5 minutes, and switch on again.

In event of faults, always contact the Truma Service on Tel: 01283 586020.

Electrical Operating Instructions

1. Ensure that the heater tank is full of water before operating the unit on electric power.
2. Turn on the electric heating element by operating the water heater switch on the power supply unit. See page 64
3. At the Ultrastore control (Fig 4.), move the rocker switch from the central off position (h), to either 850W or 1300W (g). The 850W setting will take longer to heat the water, but less power than the 1300W setting.
4. Once a setting has been selected, the electric element within the water heater will turn ON and OFF automatically, to aim to regulate the water temperature at 70°C. As long as there is a suitable mains supply present, and the water system is primed, there is no requirement to switch the water heater 230V element off.

Fig. 4



g = Water heater 'on' 850W or 1300W

h = Water heater "Off"

Note: The water temperature cannot be selected, automatic temperature limitation at approx. 70°C. For a faster heating up period the appliance can be simultaneously operated with gas and electrical power.

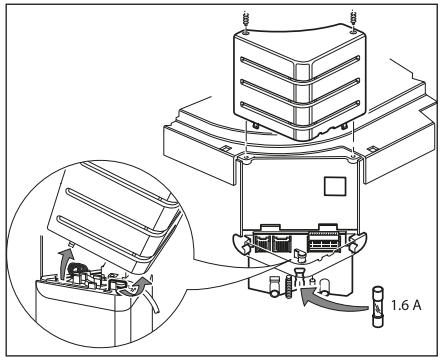
The electrical heating rod is fitted with an excess temperature cut-out. In the event of a fault, switch off at the operating element. Check water content, refill if required (close drain valve). Wait 10 minutes, then switch on again.

Maintenance

We recommend the Truma system care set for cleaning, disinfecting and looking after the boiler. Other products – in particular products containing chlorine – are unsuitable.

To avoid infestation by micro-organisms, the water content must be heated to 70 °C at regular intervals. Clean the device and the ventilation slits with a dry and fluff free cloth.

Fuses



The water heater 12 V fuse is on the electronic control unit on the water heater.

Note: Only replace the miniature Fuse on the p.c.b. with a fuse of the same type: 1.6 A, EN 60127-2-3 (slow action).

SYMPTOM	CAUSE	RECTIFICATION
Gas operation		
When switching on, the heater does not operate.	• No 12 V supply voltage.	• Check the power supply (operation voltage min. 10.5 V).
		• Check the water heater fuse (refer to mainanance "Fuses").
	• Window open.	• Close any windows above the cowl.
When switching on, the heater does not operate and the red lamp lights up after approx. 30 secs.	• Cowl cover fitted.	• Remove cowl cover and / or clear any obstruction.
	• No gas supply.	• Check gas valves and gas bottle.
	• Incorrect gas pressure.	• Check gas valves and gas bottle.
	• Air in the gas supply.	• To unlock (and purge air), switch off the appliance, wait 5 minutes, and switch on again.
Heater operates for a prolonged time and then the red lamp lights up.	• Over temperature thermostat operated.	• Check water content, refill if required (close drain valve).
		• To unlock, switch off the appliance, wait 5 minutes, and switch on again.
Electrical operation		
When switching on, the heater does not operate.	• No 230 V supply voltage.	• Connect the motorhome to the site supply and / or check residual current circuit breaker.
	• Over temperature thermostat operated.	• Check water content, refill if required (close drain valve).
		• The electrical heating element is fitted with an excess temperature cut-out. In event of a fault, switch off at the control panel, wait 10 minutes, then switch on again.
	• Too slow warm-up in position 850 W	• Please contact the Truma Service.
Water supply		
Water drips from the safety/ drain valve.	• Water pressure to high.	• Check water pressure (max. 2.8 bar), use a pressure reducer when connected to central water supply.
When opening the cold water tap, hot water tap comes out.	• Hot water flows back through the cold water supply.	• Fit a no-return valve in the cold water supply (refer to installation instructions "Water connection").

If fault persists please contact the nearest Truma Service (see Truma Service Booklet or www.truma.com).

S 3004 SPACE HEATER

Note: Surfaces become hot in use. Guards provided do not give full protection for the young or elderly.

Note: The S3004 is primarily a gas heater with supplementary 230v heating.

Symbols used

⚠ Symbol indicates a possible hazard.

△ Risk of burns! Hot surface.

Wear protective gloves to protect against possible mechanical injuries.

△ Observe the ESD - regulations! An electro-static charge can destroy the electronics. Ensure the electronics. Ensure potential equalisation before touching the electronics.

Safety Instructions

In case of gas system leaks or gas smell:

- Put out all naked flames
- Do not smoke
- Switch off equipment
- Close gas cylinders
- Open doors and windows
- Do not use any electrical switches
- Allow the whole system to be checked by an expert!

An opened skylight / lifting roof around the exhaust cowl involves the danger of exhaust gas entering the vehicle interior. The heating may only be operated with the skylight / lifting roof closed where necessary.

Only experts may carry out repair work!

A new O-ring must be mounted each time the exhaust is dismantled.

Guarantee claims, warranty claims and acceptance of liability will be ruled out in the event of the following:

- Modifications to the unit (including accessories)
- Modifications to the exhaust duct and the cowl
- Failure to use original Truma parts as replacement parts and accessories
- Failure to follow the installation and operating instructions

It also becomes illegal to use the appliance, and in countries this even makes it illegal to use the vehicle.

The vehicle owner is responsible for arranging inspection

Liquid gas devices may not be used while refuelling, in multi-storey car parks, garages or on ferries.

Slight development of smoke and odours can occur when commissioning a new factory device (or after a longer period out of use). It is appropriate to immediately allow the device to burn on the highest power and ensure good ventilation of the room.

An unusual burner noise or raising of the flame points to a controller defect and makes an inspection of the controller necessary.

Heat sensitive objects (e.g. spray cans) may not be stored in the heating installation area as high temperatures can occur.

Only suitable controller connection hoses that correspond with the national requirements may be used for the country of destination. These must be regularly checked for brittleness.

Pressure regulating devices and hoses must be replaced with new ones no more than 10 years after their date of manufacture (every 8 years if used commercially). This is the responsibility of the operator.

Important operating notes

The combustion air intake under the vehicle floor must be kept clear of dirt and slush.

The exhaust cowl must always be placed free in the air flow during operation of the heating. Roof structures can disturb the function of the heating.

The cowl must be cleared of snow before commissioning the heating system in winter. For winter or permanent camping, we recommend the attachable cowl extension set SKV (3 x 15cm - part no. 30690-00) on the cowl.

Should the heating system keep going out in extreme wind conditions or upon use in winter, we recommend use of a cowl extension AKV (15cm = part no. 30010-20800) or an additional suitable cowl top.

⚠ If 2 or 3 extensions measuring 15cm are used, these must be removed before a journey so that they are not lost (risk of accident). A remaining extension must be screwed down tight and secured with a screw.

If a canopy is mounted to the caravan, it is compulsory that the exhaust cowl is guided through the roof. Please use cowl leadthrough UEK (part no. 30630 - 04)!

The **heat exchanger**, the **exhaust duct** and all connections **must be regularly inspected by an expert,** and always **after deflagration** (misfiring).

The exhaust duct must:

- Be connected **tight and fixed** to the cowl
- Be made of one piece (without separators)
- **Without cross-section narrowing** and laid **rising along the whole length**
- **Mounted tight** together with the insulating duct **with several clamps**

No objects may be placed on the exhaust duct as this could lead to damages.

⚠ Heating systems with incorrectly mounted, a damaged exhaust duct or a damaged heat exchanger may not continue to be used!

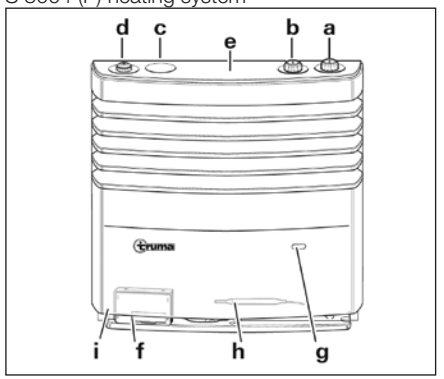
Steps must be taken to ensure that the warm air outlet of the heating system is never obstructed. Therefore never place textiles or similar to dry in front of or on the heating system. Such misuse could cause major damages to your heating system and the textiles caused by overheating. Do not place any flammable objects near the heating system!

⚠ The heating system case becomes hot during operation due to the construction. The operator is responsible for due diligence towards others (especially small children).

It is compulsory to pay attention to the operating instructions and 'Important Operating Notes' when commissioning! The vehicle owner is responsible for operation of the device taking place correctly.

OPERATING INSTRUCTIONS

S 3004 (P) heating system



a = Operating handle (thermostat)

b = Piezo pressure switch (S 3004 P)

c = Blind cover

d = Integrated panel for a Truma fan TEB-3

e = Sensor button to switch on the lighting (optional)

f = Auto ignitor with battery compartment (S 3004)

g = Mica window to observe the flame

h = Thermostat sensor

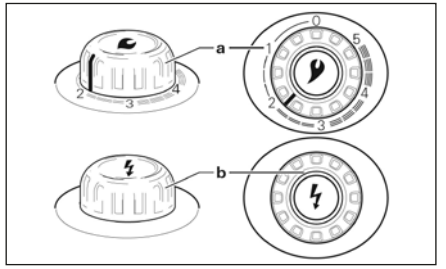
i = Type plate (removable case!)

Note: The illustration shows installation on the right. For installation on the left, the parts are arranged on the other side (mirror-image).

To operate

S 3004 P with piezo pressure sitch

1. Open gas cylinder and quick-acting valve in the gas supply line.
2. Turn the operating handle (a) into thermostat position 1-5 and push down as far as possible. Press the ignitors in quick succession at the same time until the flame burns.



3. Hold down the operating handle (a) for up to 10 seconds so that the safety pilot responds.
4. Watch another 10 seconds through the mica window whether the flame is extinguished by the air in the line (caused by gas cylinder change).

   ⚠ **Never re-ignite before waiting another 3 minutes otherwise there is danger of deflagration!** This also applies if a heating system already in operation goes out and needs to be re-ignited.

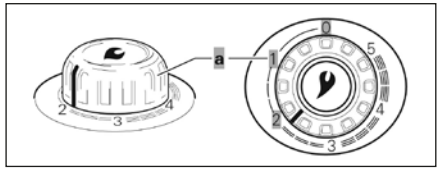
   If the gas supply line is filled with air, it can take up to two minutes until the gas is ready to burn. Keep the operating handle pressed down and keep pressing the pressure switch until the flame burns.
5. In order to achieve even and quick distribution of warm air and reduction of the surface temperature at the outlet grill for warm air, we recommend that the heating system is operated with the Truma warmer running.

Note: The S 3004 P heating system (with piezo pressure switch) is constructed so that subsequent installation of an auto ignitor is possible (part no. 30580-01).

S 3004 with auto ignitor

Make sure that a battery is inserted before commissioning for the first time (see “Battery change on auto ignitor”)!

1. Open gas cylinder and quick-acting valve in the gas supply line
2. Turn the operating handle (a) into thermostat position 1-5 and push down as far as possible. Ignition takes place automatically (audible ignition) until the flame burns.



   Hold down the operating handle for up to 10 seconds so that the safety pilot responds.

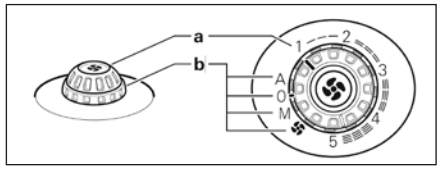
   ⚠ **Wait min. 3 minutes before re-igniting after a fault, otherwise there is a risk of deflagration!**

   Should the flame go out during operation, immediate re-ignition takes place within the closing time of the safety pilot (approx 30 seconds).

   If a flame is not produced, the auto ignitor continues to work until ‘0’ is switched on the operating handle (a).

   If the gas supply line is filled with air, it can take up to two minutes until the gas is ready to burn. Keep the operating handle pressed down during this time until the flame burns.
3. In order to achieve even and quick distribution of warm air and reduction of the surface temperature at the outlet grill for warm air, we recommend that the heating system is operated with the Truma warmer running.

Operating the fan



a = Control knob / scale for fan power (1-5)

b = Rotary switch / scale for operating modes.

- **A Automatic - The electronics control the necessary fan power and limits the speed.**
- **0 Off - Switch off fan.**
- **M Manual - Set the required fan level.**
- **Booster Level - Set the fan power to the highest value (for maximum air volume current).**

Room Thermostat

An average room temperature of approx 22°C is achieved with a thermostat setting of approx 3 without **operating the fan.** We recommend operation **with a fan** and a thermostat setting of approx 4 for comfortable warm air distribution and for reduction of condensation on cold surfaces.

The exact thermostat setting must be established corresponding with the construction type of the vehicle and according to the individual warmth requirement.

Note: The thermostat sensor is on the bottom of the heating system. Please note that the cold draughts caused by refrigerator ventilation, gaps in doors or a high pile carpet can have a negative influence on the thermostat. Such sources of disturbance are to be addressed in all cases otherwise a satisfactory temperature control is not guaranteed.

Switching off

Set the control knob on the heating system to '0' (the auto ignitor is simultaneously switched off.).

Switch off fan (set rotary switch '0').

If the device is not used for a longer period, close the quick-acting valve in the gas supply line and gas cylinder.

Maintenance

In Germany, the Truma Service Center is generally to be notified in case of any faults; the respective service partners are available in other countries (see Truma service book or www.truma.com).

Despite careful production, the heating system can contain parts with sharp edges, therefore always wear protective gloves for maintenance and cleaning work!

△ Observe the ESD - regulations!

The electronics can be damaged by the danger of electrostatic charge. Only experts may carry out repair work!

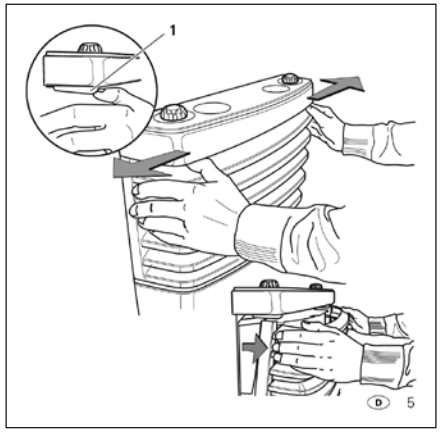
Cleaning
(only with the device switched off!)

It is recommended to remove the dust that has collected on the heater exchanger, floor plate and on the fan wheel on the Truma warm air system at least once per year at the beginning of the heating season. Carefully clean the fan wheel with a paint brush or small brush.

Remove Cover

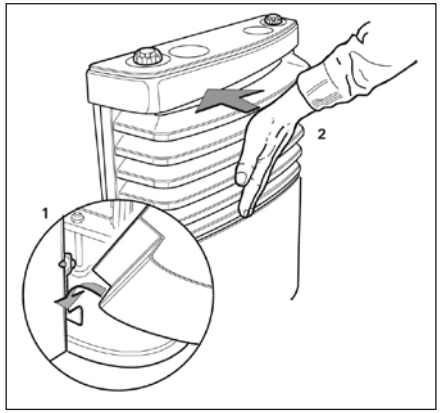
⚠ Only remove the cover with the heating switched off and cold.

By simultaneously pressing both closure levers (1) outwards, the cover is unlocked. It can be pivoted out and lifted out of the lower bearings.



Attach cover

Suspend the cover (1) in the bottom bearing and pivot in (2) until the lock audibly clicks into place. Check the tight fit by pulling.



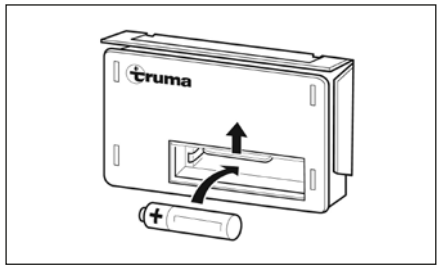
Battery change on the auto ignitor

If ignition sparks cannot be heard when commissioning or only at intervals of more than one second, the battery needs to be replaced.

Only change the battery with the heating system switched off. Insert a new battery before the beginning of each heating season! Dispose of the old battery correctly!

Only use temperature-resistant (+70°C), leak-proof mignon batteries (LR 6, AA, AM 3) (part no. 30030 - 99200); other batteries can cause function faults!

Remove the case, slide the battery compartment cover up and change the battery. Pay attention to positive / negative. Close the battery compartment again. Put the case back on.



Note: It is compulsory to remove the battery and dispose of it correctly before scrapping the auto ignitor!

Technical data

(Established according to EN 624 or Truma test conditions)

S 3004 (P), S 5004

Gas type
Liquid gas (propane / butane)

Operating pressure
30mbar (see type plate)

Rated thermal output
S 3004 (P): 3500W

S 5004: 6000W

Gas consumption
S 3004 (P): 30-280 g/h

S 5004: 60-480 g/h

S 3004(P): Q_n = 4,0 kW (Hs); 290g/h; C_{51}; $I_{3B/P}$

S 5004(P): Q_n = 6,8 kW (Hs); 290g/h; C_{51}; $I_{3B/P}$

Countries of destination

BE, BG, RO, DK, DE, EE, FI, FR, GR, UK, IS, IE, IT, LV, LT, LU, MT, NL, NO, AT, PL, PT, SE, CH, SK, SI, ES, CZ, HU, CY

Operating voltage
1.5 V (auto-ignitor with battery)

Current Draw
225mW (ignite)

Weight
S 3004 (P): approx 9.8kg (without fan)

Note: The motorhome control panel, situated above the entrance door must be switched on for the fan to operate. See page 64

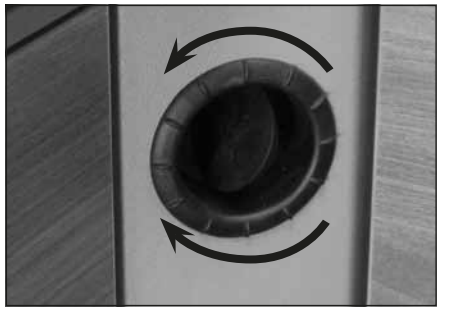
Cleaning

(With switched off appliance!) We recommend removing dust which has collected on the heat exchanger and base plate of the heater and on the impeller wheel of the Trumavent fan, once a year before the heating season starts. Clean the impeller wheel carefully using a brush or tooth brush.

Butterfly outlets

The butterfly plate may be opened or closed to control the quantity of air and may also be twisted around to control direction.

For uniform distribution, outlets nearest the heater should be closed more than those further away.



Blown air

The air ducting outlets are generally of the butterfly type and may be opened or closed by adjusting the butterfly valves. Twisting the disc in its housing directs the flow in the direction required.

One outlet on each leg of the air ducting layout must be kept open at all times. Under no circumstances should the air ducting outlets be blocked.

Truma Combination Boiler

The Truma Combination Boiler has been designed to run on gas or electric power and the optimum performance is obtained when used in **dual fuel mode, that is running on gas and electric at the same time.**

Running in dual fuel mode has the following benefits:

- Fastest possible heat up time, the 2KW gas burner combines with a 1.8KW electric element to provide 3.8KW of energy to heat your hot water and warm your motorhome.
- The intelligent heat management system automatically senses when the water and room are nearing the required temperature and then automatically turns off your gas burner and operates solely electric power, conserving your gas.
- As hot water is used or the room cools the Truma combination heater will continue to operate on electric only until a point where the demands necessitate that additional gas power is required. An example for such a demand could be for instance if the exterior door was left open and the room temperature dropped by 10 degrees in the space of a few minutes, in this case the intelligent heat management system would decide that the best way to get the room back to the required temperature would be to use both gas and electric at the same time.

Operating the Truma Combination system on electric or gas only will result in longer heat up times for hot water and the room temperature in comparison to operating on dual fuel.

Operating on electric only may not in all cases maintain a comfortable room temperature especially in colder conditions.

The intelligent heat management system operation in dual fuel mode and allow the Truma Combination boiler to prioritize the electric power source over your gas, which all conserve your gas supply.

Truma Combi Control Instructions

Note: These instructions detail the operation of the Combi Control Panel - for further details of the Truma Combi appliance, please see the following section.

Operating instructions

Please be sure to read the instructions for installation and use before attempting to connect and use this device!

Symbols used

⚠ Symbol indicates a possible hazard.

Comment including information and tips.

Safety instructions

⚠ To protect you from electrical shocks, injury or burns the following basic safety principles must be observed when using electrical devices. Please read and follow these instructions before using the device.

Installation

Ensure that the devices are positioned safely and cannot fall down or over. Always position the cables to ensure they do not pose a tripping hazard. Do not expose electrical devices to rain. Do not operate electrical devices in damp or wet environments. Do not operate electrical devices close to flammable liquids or gases. Position the devices so that they are out of the reach of children.

Protection against an electrical shock

Only operate devices whose casings and cables are undamaged . Ensure the cables are installed safely. Do not pull on the cables.

Use

Do not use electrical devices for purposes other than those stated by the manufacturer.

Repairs

Do not repair or modify the device. Please contact your dealer or the Truma Service (see service manual or www.truma.com).

Accessories

Only use accessories and additional devices that are supplied or recommended by the manufacturer.

Intended use

The CP 25-UK is a digital operating / display and control unit for the Combi 4 E / 6 E.

The device is designed to be installed in caravans and motorcaravans.

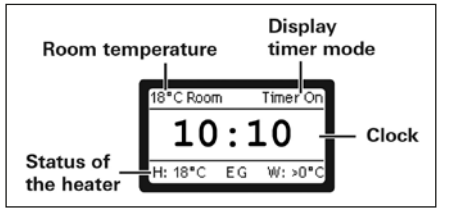
Initial operation or activation after a power cut

After the operating voltage has been connected , the unit will beep and the display remains dark. To switch on, press the key ⏻ and the main screen will appear.

Function description

Note: More details regarding the operating modes you will find in the operating instructions of your Combi.

Main Screen



Room temperature: Display on when the heater is active

Timer: Display on when the timer is active

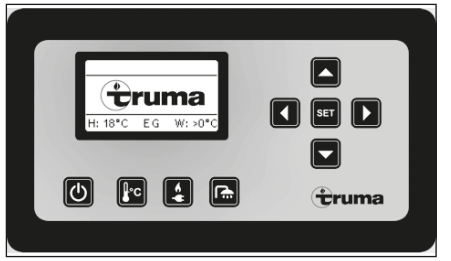
Clock: Only if the clock has been set, otherwise the Truma logo will appear in the display

Status of the heater :

H: Set room temperature (e.g. 18°C)

EG: Energy selection (E = Electro, G = Gas)

W: Set water temperature



▲ Selection Key upwards to select functions or set values

▼ Selection key downwards to select functions or set values

◄ Selection key backwards to select values

► Selection key forwards to select values

On / Off

- Display and heater is switched on and / or off
- The clock is shown when the time is set
- After an interruption in the operating voltage, the display and the heater are switched off. If the time is shown, this needs to be set.

Green LED shines when the heater is on

Greed LED flashes when the heater is after running

Red LED shines when there is a malfunction

Manual mode

- In manual mode, the heater is controlled via the 4 keys below the display.
- It is not necessary to set the time because the Truma logo is shown in the display instead of the time.

Note: A pre-selection between summer / winter operation must be made via the set-up.

Room Temperature

When the menu is selected the yellow LED shines.

The current set room temperature is displayed and can be changed.

Key ▲ increases the room temperature (max 30°C) by 1°C.

Key ▼ reduces the room temperature (min 5°C) by 1°C.

A change in the room temperature needs to be confirmed with **SET**.

Energy selection

When the menu is selected the yellow LED shines.

Depends on summer / winter operation (see setup)

- Use key ▲ or ▼ to select the energy source and confirm with **SET**.
- Bar shows current mode.

Summer operation

230 V - 4 A (electro mode 230 V, 900 W)
230 V - 8 A (electro mode 230 V, 1800 W)
Gas powered

Winter operation

230 V - 4 A (electro mode 230 V, 900 W)
230 V - 8 A (electro mode 230 V, 1800 W)
Gas powered
230 V - 4 A and gas (mixed operation gas and electro mode 900 W)
230 V - 8 A and gas (mixed operation gas and electro mode 1800 W)

Note: If electro or mixed operations are selected and there is no 230 V power supply, the heating will not function.

Water temperature

When the menu is selected the yellow LED shines. During the heating-up phase, the set water temperature flashes in the main screen.

- Use key ▲ or ▼ to select the water temperature and confirm with **SET**.
- Bar shows current mode

Depends on summer / winter operation (see setup)

Summer operation

Water 40°C
Water 60°C

Winter operation

Water > 0°C (heating **without** controlled water temperature, heating has priority)

Water 60°C

Timer mode

- The heater runs in timer mode as soon as one or both timers have been activated in the setup.
- 'Timer On' appears in the main screen.
- The heater is only active in the set time window (active timer)
- Only the energy selection can be changed in the case of an active timer
- A change in the room or water temperature will automatically switch the control system into manual mode.

Set up

In the main screen display you can enter the setup menu via the setup key.

The following settings can be made:

Back (return to main screen)

Timer 1 on / off (select **SET** on / off)

Timer 2 on / off (select **SET** on / off)

Summer / Winter (select **SET** summer / winter)

Set clock

Set timer 1

Back (Return to main screen)

Start (Set start time)

Stop (Set stop time)

Water (Set water temperature)

Temp (Set room temperature)

The timer settings can be made every day until the timer is switched off. If the room or water temperature is changed outside the timer menu, the timer is automatically switched off.

Set timer 2

Back (Return to main screen)

Start (Set start time)

Stop (Set stop time)

Water (Set water temperature)

Temp (Set room temperature)

The timer settings can be made every day until the timer is switched off. If the room or water temperature is changed outside the timer menu, the timer is automatically switched off.

Buzzer on / off (select **SET** on / off)

Backlight (brightness levels 0-9)

Note: If no action is taken, the display switches back to the main screen after a few seconds. The lighting switches off after a short delay.

Maintenance

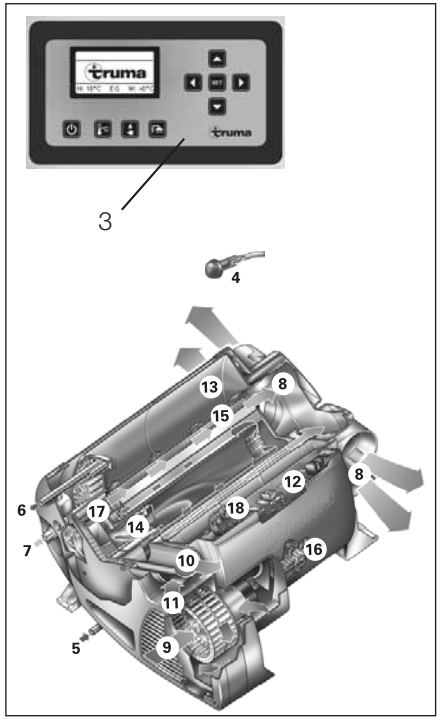
Clean the panel with a dry and fluff-free cloth.

Trouble shooting list

Fault	Rectification / Cause
Clock is not shown	Set clock
Activated timer is not shown anymore	Power supply was interrupted
Room temperature is not shown	Heater not active
Device does not react anymore	Interrupt power supply for 10 seconds
Heater / display does not react	Check 12 V supply voltage

If these measures do not rectify the problem, please contact the next Truma service point (See Truma service book or www.truma.com)

Truma Combi



3 Time switch ZUCB (see previous section)
4 Room temperature sensor
5 Cold water connection
6 Hot water connection
7 Gas connection
8 Hot air outlets
9 Recirculated air intake
10 Waste gas discharge
11 Combustion air infeed
12 Electronic control unit
13 Water container (10 litres)
14 Burner
15 Heat exchanger
16 Power electronics
17 Heating elements 230 V
18 Overheating switch 230 V

Function description

The liquid gas heater Combi E is a warm-air heater with integrated hot water boiler (10 liter volume). The burner operates fan-supported, which ensures trouble-free function even when on the move. The unit also has heating elements for electrical operation.

In winter operation the heater can be used to heat the room and simultaneously warm water. If only warm water is required, select summer operation.

3 different options are available for operating the unit.

– gas operation only Propane / Butane for autonomous use

– electrical operation only 230 V for stationary use on camp sites

– or gas and electrical operation – mixed operation only possible in winter mode.

Winter operation

In winter operation, the unit automatically selects the required power setting according to the temperature difference between the temperature set on the control panel and the current room temperature. When the boiler is filled, the water is automatically heated as well. The water temperature depends on the selected operational mode and the heater output.

All 3 energy selection options can be used for winter deployment.

With gas operation the unit automatically selects the output level that is required.

Depending on the fuse protection at the camping site, power of 900 W (3.9 A) or 1800 W (7.8 A) can be manually selected for electrical operation.

If more output is required (e.g. heating up or low outside temperatures) gas or mixed operation should be selected so that enough heating power is always available.

With mixed operation, 230 V electrical operation is preferred if the power requirement is low (e.g. for maintaining the room temperature). The gas burner is not enabled until the power requirement is higher, and is the first to switch off during heat-up operations.

Summer operation (boiler operation only)

Gas operation or 230 V electrical operation is used for hot water preparation. The water temperature can be set to 40 °C or 60 °C.

With gas operation the water is heated at the lowest burner setting. Once the water temperature is reached, the burner switches off.

Depending on the fuse protection at the camping site, power of 900 W (3.9 A) or 1800 W (7.8 A) can be manually selected for electrical operation.

Mixed operation is not possible. With this setting the unit automatically selects electrical operation. The gas burner is not enabled.

Repairs may only be carried out by an expert

Guarantee claims, warranty claims and acceptance of liability will be ruled out in the event of the following:

– modifications to the unit (including accessories),

– modifications to the exhaust duct and the cowl,

– failure to use original Truma parts as replacement parts and accessories,

– failure to follow the installation and operating instructions.

It also becomes illegal to use the appliance, and in some countries this even makes it illegal to use the vehicle.

During the initial operation of a brand new appliance (or after it has not been used for some time), a slight amount of fumes and smell may be noticed for a short while. It is a good idea to heat the device up several times in summer operation (60 °C) and to make sure that the area is well ventilated.

Heat-sensitive objects such as spray cans or flammable liquids may not be stored in the same compartment where the heater is installed because, under certain conditions,

this area may be subject to elevated temperatures.

Important operating notes

The integrity and tight fit of the exhaust gas double duct must be checked regularly, particularly at the end of long trips. Also check the mounting of the appliance and the cowl.

Following a blow-back (misfire) always have the exhaust gas system checked by an expert!

Always keep the cowl for the exhaust duct and combustion air intake free of contamination (slush, ice, leaves etc.).

The hot air outlets and the recirculated air intake openings must be free so that the unit does not overheat. The integrated temperature limiter blocks the gas supply when the unit becomes too hot.

Operating Instructions

Always observe the operating instructions and “Important operating notes” prior to starting! The vehicle owner is responsible for the correct operation of the appliance.

Before using for the first time, it is essential to flush the entire water supply system through with clean water. If the heater is not being used, always drain the water contents if there is a risk of frost. There shall be no claims under guarantee for damage caused by frost!

Taking into operation

Heating is possible without restrictions with gas, electrical and mixed operation, with or without water.

Check to make sure the cowl is unobstructed. Be sure to remove any covers that may be present.

For operating on gas turn on gas cylinder and open the shut off valve at the manifold.

For operating on electric operate the heater / heating system heater switch on the power supply unit. See page 65.

Summer operation (boiler operation only)

Mixed operation (gas and electrical) is not possible in summer mode. With this setting the unit automatically selects electrical operation with a preselected power setting of 900 W or 1800 W.

Winter operation

- **Heating with water temperature monitoring**
  The device automatically selects the required power setting in accordance with the temperature difference between the temperature selected on the control panel and the current room temperature. When the room temperature selected on the control panel is reached, the heater switches back to the smallest setting and heats the water to 60 °C. Once the water temperature is reached, the heater switches off and the yellow LED (p) goes out. The warm air fan can continue to run in order to cool the unit (after-run).
- **Heating without water temperature monitoring**
  The device automatically selects the required power setting in accordance with the temperature difference between the temperature selected on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the outgoing air temperature (on the unit) has fallen to 40°C or less.
  If the boiler is filled, the water will automatically be heated at the same time. The water temperature is then dependent on the heating output being given off, and the duration of heating required to reach the desired room temperature.
- **Heating with drained water system**
  Depending on the operating mode, the unit will automatically select the required power level according to the temperature difference between the setting on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the outgoing air temperature (on the unit) has fallen to 40°C or less.

Filling the water heater

Switch on power for water pump (main or pump switch).

Open hot water taps in kitchen and bathroom, (set preselecting mixing taps or single-lever fittings to “hot”). Leave the fittings open for as long as it takes for the boiler to displace the air and fill up, and the water to flow without interruption.

If just the cold water system is being operated, without using the water heater, the heater tank also fills up with water. To avoid frost damage, the boiler must be drained through the drain valve, even if the boiler was not operated.

When connecting to a central water supply (rural or city mains), a pressure reduction valve must always be installed to prevent pressures above 2.8 bar from developing in the water heater.

Draining the water heater

Switch off power to water pump (main or pump switch).

Open hot water taps in kitchen and bathroom.

In order to check the water that is flowing out, place an appropriate container (capacity 10 litres) beneath the drain valve.

Open the drain valve which is situated next to the boiler by lifting the yellow handle into the vertical position.

Check whether all of the water in the boiler (10 itres) has been drained into the container via the drain valve.

There shall be no claims under guarantee for damage caused by frost!

Maintenance

Only original Truma parts may be used for maintenance and repair work! Materials in the device which come into contact with water are suitable for use with drinking water (see manufacturer‘s declaration: www.truma.com / downloads / manufacturer‘s declaration).

Bio-film, deposits and limescale must be removed using chemicals to protect the unit from infestation by microorganisms.

Only chloride-free products must be used in order to prevent damage to the unit.

The effectiveness of the use of chemicals to combat microorganisms in the unit can be increased by heating the water in the boiler to 70 °C at regular intervals.

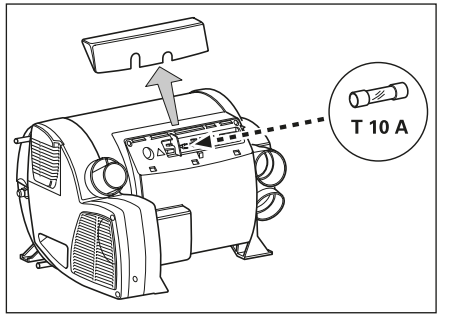
The unit must stay switched on for at least 30 minutes and no warm water may be removed. The residual heat in the heat exchanger will heat the water up to 70 °C.

Fuses 12 V

The fuse is in the electronics beneath the connection cover.

Replace the unit’s fuse only with an identical fuse.

Device fuse: 10 A – slow – (T 10 A)



Fuses 230 V

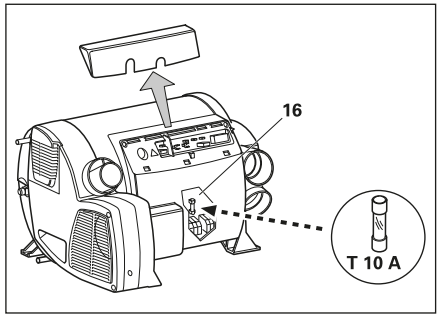
The fuse and the power supply lines must only be replaced by an expert!

The unit must be disconnected from the mains

(all poles) before opening the electronic housing lid.

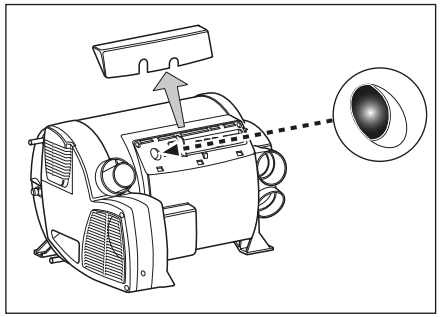
The fuse is in the power electronics (16) beneath the electronic housing lid.

This fine fuse must always be replaced with a fuse of the same type: 10 A, slow, interrupting capacity “H”.



Overheating protection 230 V

The 230 V heating facility has a mechanical overheating switch. If the 12 V power supply is interrupted during operation or during the after-run period, for example, the temperatures within the unit could activate the overheating protection.



To reset the overheating protection, allow heater to cool, remove connection cover and press red reset button.

Technical data

determined in accordance with EN 624 or Truma test

Device category

I3 B/P in accordance with EN 437

Type of gas: Liquid gas (propane / butane)

Operating pressure: 30 mbar (see type plate)

Water contents: 10 litres

Heating up time from approx. 15° C to approx. 60° C

Boiler approx. 20 minutes (measured according to EN 15033) Heater + boiler approx. 80 min.

Pump pressure: max. 2.8 bar

System pressure: max. 4.5 bar

Rated thermal output (automatic output levels)

Gas operation

Combi 2 E UK: 2000 W
Combi 4 E: 2000 W / 4000 W

Electrical operation

Combi 2 E UK / Combi 4 E / 900 W / 1800 W

Mixed operation (gas and electrical)

Combi 2 E UK /
Combi 4 E max. 3800 W

Gas consumption

Combi 2 E UK: 160 g/h
Combi 4 E: 160 – 320 g/h

Readiness-heat power requirement
Combi 2 E UK / Combi 4 E
Gas operation 5.2 g/h

Countries of destination

Combi 2 E UK: only approved in GB
Combi 4 E (see plate type)

Air delivery volume (free-blowing without hot-air pipe)

Combi 2 E UK /
Combi 4 E: with 3 hot-air outlets max. 249 m³/h
with 4 hot-air outlets max. 287 m³/h

Current input at 12 V

Heater + Boiler

Combi 2 E UK /
Combi 4 E: Short-term max. 5.6 A
(average power consumption 1.1 A)

Heating up of boiler: 0.4 A
Stand-by: 0.001 A
Heating element FrostControl (optional): maximum 0.4 A

Current input of 230 V

3.9 A (900 W) or 7.8 A (1800 W)

Weight (not containing water)

Heater unit: 15.1kg
Heater unit with peripheral devices: 15.6kg

FITTED EQUIPMENT

Troubleshooting

Fault	Cause	Rectification
After switching on (winter and summer operation) none of the controls are operational.	- No operating voltage. - Device fuse or vehicle fuse defective.	- Check 12 V battery voltage, charge if necessary. - Check all electrical plug connections. - Check the unit or vehicle fuse and replace if necessary (see fuses).
The unit is switched on, but the heater does not operate.	- The temperature setting on the control panel is lower than the room temperature.	- Select higher room temperature at the control panel.
After operating for a longer period of time, the heater switches to failure.	- Summer operation with empty water tank. - Hot-air outlets blocked. - Recirculated air intake blocked. - Gas pressure regulator iced up - Butane content in the gas cylinder too high.	- Switch device off and allow to cool. Fill boiler with water. - Check individual outlet apertures. - Remove blockage from recirculated air intake. - Use regulator heating (EisEx). - Use propane (at temperatures below 10 °C in particular, butane is unsuitable for heating purposes).
Fan continues to run after controls switched off	- Unit was switched off during failure. After-running is active in order to reduce the unit's temperature. - After-running is active in order to reduce the unit's temperature.	- After-running will switch off after a few minutes. Only at that time will a failure reset be possible (switch off and then back on). - No failure. After-running will switch off after approximately 5 minutes.
When the device is switched on in electrical operation, the heater does not heat up.	- No 230 V operating voltage. - 230 V fuse defective. - Overheating protection has activated	- Check 230 V operating voltage. - Check 230 V fuse and replace if necessary. - Reset overheating protection. Allow heater to cool, remove connection cover and press reset button.

If these measures do not remove the failure, please contact the Truma Service Centre.

OPERATING INSTRUCTIONS CONTROL PANEL 3010 613

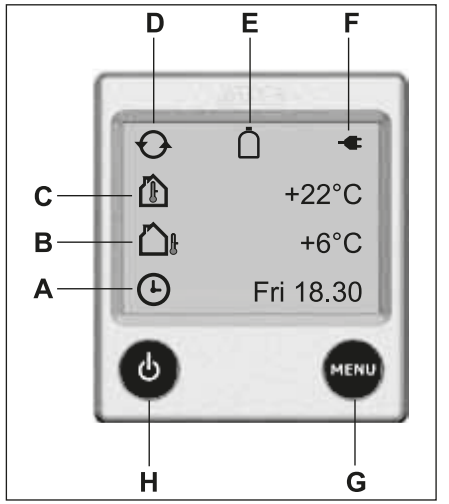
Please read these instructions carefully before using the boiler. For operating and installation instructions of boiler, please see separate instruction. These instructions are for the Alde Compact 3010 boiler fitted in vehicles, boats and buildings in accordance with CE no. 0845 BP0003, installation in vehicles e500 00005 and EMC e503 261. Installation and repairs may only be carried out by a professional. National regulations must be adhered to.

1. Starting the boiler

1. The control panel and the boiler are switched off.

2. To start the boiler, press the On/Off button and the start-up display is displayed. The boiler starts with the last selected setting.

2. The control panel in standby mode



A. Clock

The clock shows day and time. The clock is set under section 9 point 2.

B. Outdoor temperature

The outdoor temperature is displayed if a sensor probe is mounted.

C. Indoor temperature

The indoor temperature is displayed automatically.

D. Circulation pump

This symbol is displayed when the heating pump is requested.

E. LPG bottle full / empty

This symbol is displayed when the sensor on the cylinder changeover is connected and activated in accordance with section 9 point 8.

F. 230 volts

This symbol is displayed when 230V is connected to the boiler.

G. MENU button

Button for setting menu.

H. On / Off button

Shut down / turn on the boiler.

3. From standby mode to setting menu

When on standby, the indoor temperature is displayed, and the outdoor temperature is displayed if an outdoor temperature sensor has been connected. The background lights up when you press the screen or the MENU button. Start the setting menu by pressing the MENU button. The background lights up and those functions which can be set are displayed. The settings are automatically saved after 10 seconds. The control panel reverts to standby automatically after 30 seconds if no buttons are pressed (or if the MENU button in the setting menu is pressed).

1. The control panel in standby.

2. The control panel in setting menu.

4. Set the required temperature

The temperature can be set from +5°C to +30°C in steps of 0.5°C. Warm water is always available (50°C) when the boiler is on and running on LPG or electricity. During summer, when only warm water is required, adjust the temperature setting to below the surrounding temperature so that the central heating pump does not start.

1. The temperature displayed is the temperature which is set at present (in this case 22.0°C).
2. Raise the temperature by pressing the + button. Lower the temperature by pressing the – button.
3. The settings are ready and the central heating pump will work at the set temperature.

5. Extra warm water

If you need more warm water, you can raise the water temperature temporarily from 50°C to 65°C. After 30 minutes, the boiler reverts to normal operation. When you have selected more warm water the circulation pump stops.

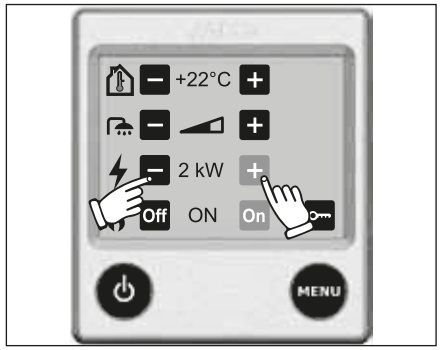
1. Increase the quantity of warm water by pressing the + button. When activated the plus symbol changes colour to green.
2. The settings are ready.

If you wish to revert to the basic warm water settings before 30 minutes have expired.

1. Reset the warm water by pressing the – button.
2. The settings are ready.

6. Heating with electricity

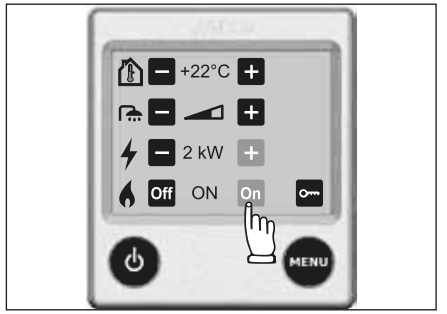
Do as follows to active heating with electricity. The greater the power, the better the heating performance. In choosing between electricity and gas, electricity is given priority.



1. Start and step between the various power steps (Off, 1kW, 2kW or 3kW) with the + button or – button. The set value is displayed on the screen. When activated the plus symbol changes colour to green. (Certain boilers are equipped with max 2 kW.)
2. The settings are ready and the boiler is working at set temperature.
3. To switch off the electrical operation, step with the – button to Off.

7. Heating with gas

Do as follows to activate heating with gas. If both electricity and gas are selected, electricity is given priority.

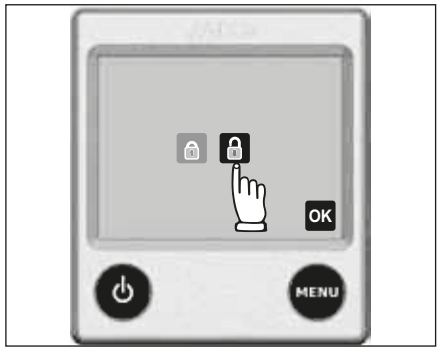


1. Start the gas operation by pressing On. The On symbol is activated and changes colour to green.
2. The settings are ready and the boiler is working at set temperature.
3. In order to switch off gas operation, press Off.

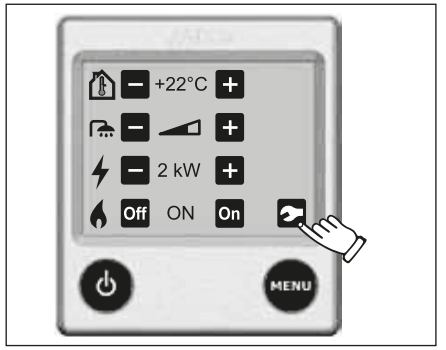
8. Unlocking the tool menu

It is possible to go from the setting menu to the tool menu. Under the tool menu you can access the other functions of the control panel, described in section 9.

1. The control panel in setting menu. Press the unlock symbol.



2. The control panel in unlocking menu. Press on open padlock, then OK or MENU to unlock the tools menu. When activated the symbol changes colour to green.

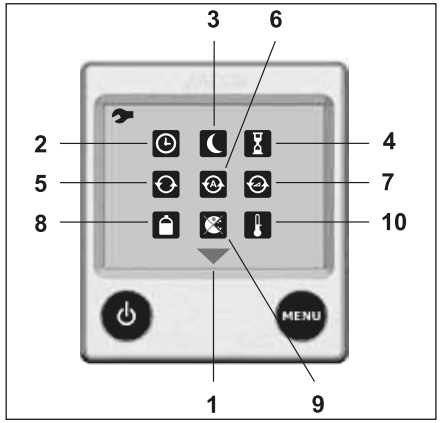


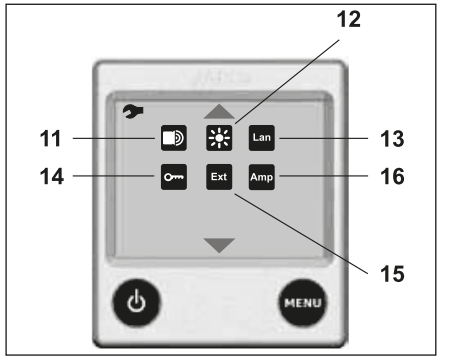
3. The control panel in setting menu with unlocked tool menu. In order to get to the tool menu, press the symbol.

9. The tool menu - functions

When you are in the tool menu (see section 8), you can use the tools described below. Step between the various fields by pressing the up or down arrow symbols. You can always leave the tool menu with the MENU button.

Note: Functions marked with * indicate that the symbol for the function is displayed on the control panel even if the accessory is not installed!





1. Arrow symbols
Step between the various tool fields by pressing the up or down arrow symbols. You can always leave the tool menu with the MENU button.

2. Clock
The clock must be set if automatic temperature change or automatic start is to be used. If 12V voltage is lost, the clock will stop and will no longer be displayed. This is prevented with an optional mounted battery backup.

3. Automatic temperature change
This function is used when you want to programme a timed temperature change, for example, to have the heating temperature raised in the morning and lower during the night.

4. Starting the boiler automatically
This function is used to start the boiler automatically at a later point of time. With automatic start, the boiler works for 24 hours and then stops. After that, it repeats the automatic start once a week; at the same day and time, as long as the function is activated. For automatic start to function, the On/Off button must be set in the OFF position.

5. Constant pump operation
With this function, the selected pump is constantly operating. The function is disconnected in the factory setting. This function limits access to warm water, especially if not much heating is needed.

6. *Pump Auto / 12 V
In the Auto mode, the 230V pump operates, and when 230V is disconnected, the 12V pump starts. In 12V mode, the 12V pump is used even if 230V is connected. The Auto function is activated in the factory setting.

7. *Pump speed
The circulation pump's capacity can be controlled from the panel.

Note: A pump with this control must be installed in order that this function can be used.

8. *LPG bottle full / empty
This function is used in combination with the cylinder changeover (DuoComfort or Secumotion) and indicates if the LPG bottle is full or empty. This function can also be used to control defroster heating of the cylinder changeover using an EisEx defroster.

Note: The cylinder changeover (DuoComfort or DuoControl) must be installed in order for this function to work.

9. Automatic temperature increase (legionella)
At 02.00 at night (if the clock is set) the boiler starts and works according to “Warm Water” (see section 5). This is in order to reduce the risk of legionella. The function is disconnected in the factory setting

10. Offset (temperature adjustment)
Using this function, you can calibrate the temperature on the panel if you notice that the temperature (the stabilised room temperature) is not the same as the temperature shown on the panel. This also applies to outdoor temperature

11. Button sound
With this function, you can connect or disconnect the button sound. The button sound is connected in the factory setting.

12. Luminance
The luminance can be adjusted between 1-10. The factory setting is 2.

Lan

13. Language
This function is used to reset the screen between different languages. Available languages are: English, French and German. On the other hand, the service menu is only in English (see section 10.1).

14. Tools / Key
Under Tools / Key you can lock or unlock access to the tool menu.

Ext

15. *External start
This function is used when starting the boiler from the outside, for example, with GSM. When external start has been activated, the control panel’s On/Off button must be switched off (see the assembly setting manual for external start).

Note: To use this function, an external start installation is required.

***230 V**
This function is used in connection with starting the boiler when connection of 230 V to vehicle takes place from outside. When the 230 V function has been activated the control panel’s on/off button must be turned off, but 12 V must be connected (main switch on). Before turning off the control panel with the on / off button set the parameters/ functions that you want the boiler to have when it starts (230 V is connected).

Amp

16. *Load monitor
This function is used to prevent the 230V fuses being overloaded. If the total power consumption of the vehicle, boat or building exceeds the set value, the boiler’s power will be automatically reduced. On account of voltage variations and tolerances, different setting levels can be selected (for example, for 6A fuse, one can choose 6 or 7 Amp setting). If the fuse does not hold, choose a lower set value. The function is disconnected in the factory setting.

Note: The load monitor has to be installed for the function to be used.

Fault messages

If an error occurs in the system, the display will show the reason.

This is only displayed when the panel is on standby.

Battery too low: If the vehicle, boat or building has a battery voltage of less than 10.5V, the boiler stops. It is automatically reset when the voltage reaches 11V.

Fan Failure: Faulty fan speed. In order to reset, disconnect 12 V from the boiler and reconnect (automatic reset after 5 minutes).

Gas failure: Gas finished. Reset by switching off and restarting the boiler with item 1.

Overheat red fail: Overheating protection (red cable) triggered. To reset, disconnect 12 V from the boiler and reconnect.

Overheat blue fail: Overheating protection (blue cable) triggered. To reset, disconnect 12 V from the boiler and reconnect.

Window open: Window open, the boiler stops for gas. Gas operation in the boiler starts again when the window is closed. The electrical operation remains in function. Check the vehicle, boat or building manual to see whether this function is installed.

Connection failure: There is a connection fault between boiler and panel. To reset, disconnect 12 V from the boiler and reconnect.

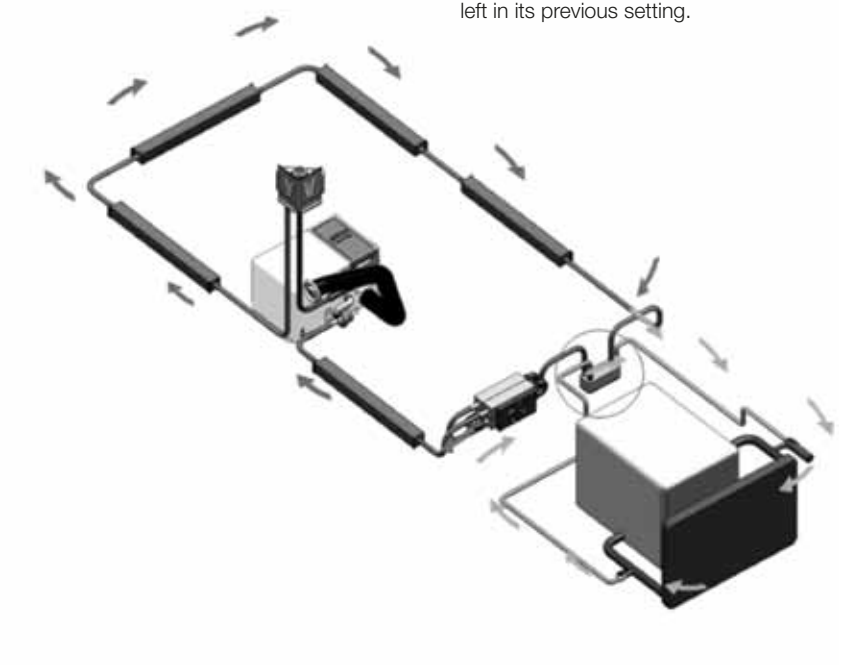
Panel failure 1: Panel fault

Panel failure 2: Panel fault

Alde Heat Exchanger

The Kon Tiki range of motorhomes is fitted with an Alde heat exchanger, which transfers heat from the engine of the motorhome (when available) to the heating system in the habitation area of the motorhome.

The diagram below shows a typical heating circuit, with the heat exchanger highlighted. The heat exchanger provides a link, via a series of plates, between the engine coolant fluid from the base vehicle, and the glycol fluid in the Alde heating circuit: At no time though do these two fluids mix, so the levels of each fluid must be maintained separately.



To use the Heat Exchanger

The Alde heating system must be switched on, while the motorhome engine is running, to use the heat exchanger. The following settings on the Alde control panel are suggested:

Turn Alde heating system ON using power button at bottom left of panel

Press MENU button at bottom right of panel

Using the MINUS (-) and PLUS (+) touch screen settings on the top row of the panel (Thermometer symbol) to select a desired room temperature.

During en-route use the water temperature setting on the second row of the touch screen (Shower symbol) is not relevant, and can be left in its previous setting.

Use the MINUS touch screen setting on the third row of the touch screen (Lightning flash symbol) to switch off electric heating.

Use the MINUS touch screen setting on the fourth row of the touch screen (flame symbol) to switch off the gas heating.

With these settings, once the motorhome engine is up to normal operating temperature, heat will become available for the Alde system to use in the habitation area as required.

It is also possible to use the Gas and Heat Exchanger sources simultaneously whilst travelling, by turning on Gas heating using the fourth row of the touch screen.

In this situation the Alde system will initially use Gas to heat the rear habitation area - when the motorhome engine is up to normal operating temperature, gas burner operation, and therefore gas consumption, will automatically be reduced.

Please note: this system is not designed to pre-heat the engine prior to travel.

PRE-START CHECKS

- Ensure the system is filled with Glycol before starting the boiler, check the expansion tank level. The fluid should be 10mm above the minimum mark when cold.
- Ensure adequate LPG Propane, 230V and 12V supplies are connected and turned on. The control panel should be active and display the 230V connection symbol.
- Turn the boiler 'On' using the control panel, and raise the desired room temperature to +30ºC. Visually check in the expansion tank that the pump is operating.
- Turn on the 2kW electric heater using the panel. Wait for 10 minutes and check that the upper flow pipe on the boiler is getting hot. The bottom return pipe may also be warm.
- Turn on the gas burner using the control panel. You might not be able to hear it start, so visually check the flue outside to confirm the boiler is operating. Wait for 10 minutes and check the lower return pipe on the boiler. It should now be hot and the boiler fully operational.

ALDE COMPACT 3010

Please read these instructions carefully before using the boiler.

Installation and repairs may only be carried out by a professional. National regulations must be adhered to.

BOILER DESIGN

The boiler consists of three eccentrically- fitted cylinders (heat exchanger, water jacket for the heating system and, outermost, water jacket for hot water). The two outer pipes, and their ends and connections, are made of stainless steel, while the heat exchanger is made of aluminium.

The heat exchanger is divided into two semi-circles. The burner is located in the upper half, being the combustion chamber, and the combustion gases are expelled through the lower half. The burner unit is fitted on the end of the heat exchanger. It consists of a combustion fan, burner, solenoid valve and intake/exhaust connections. Two heating cartridges are fitted to the water jacket of the heating system. Maximum output is 2 or 3 kW, depending on model.

DESCRIPTION OF FUNCTIONS

Using LPG

When LPG operation is selected on the control panel, the combustion fan starts. When the fan speed is correct, it signals the circuit board that the boiler can be lit. The circuit board sends ignition sparks to the spark plug at the same time as it sends electricity to the solenoid valve, which opens to allow gas in. The burner ignites, and a sensor transmits a signal back to the circuit board that the boiler is lit, and the ignition spark stops. The burner keeps burning until the boiler thermostat or the room thermostat reaches the set temperature reading.

Should the boiler go out for any reason, the sensor is activated and a new attempt is made to start the boiler (in about 10 seconds).

Using the heating cartridge

Electrical operation is selected on the control panel, the 12-volt relays on the circuit board trip, allowing the 230 volt supply to reach the electrical elements.

The heating cartridge is controlled in the same way as the gas boiler.

Warm water

When only warm water is required, for example during the summer, no settings need to be made, the boiler will look after this function automatically.

The pump will only start when the temperature in the vehicle is lower than the set temperature. If the vehicle temperature is higher, the pump will not start.

IMPORTANT INFORMATION

- The boiler must not be started if there is no glycol in the system.
- The LPG boiler and heating cartridge may be operated in parallel.
- The heating system may be heated up without the warm water heater being filled with fresh water.
- Always switch off the main isolator for the boiler when the vehicle is not being used.
- Always drain the warm water heater of fresh water if there is a risk of frost.
- The LPG boiler must not be operated when refuelling the vehicle.
- When washing the vehicle, take care not to get water in the venting.

The Domestic hot water heater

The boiler is fitted with a built-in warm water heater with a volume of approx. 8.5-litres fresh water. The warm water heater can produce around 12 litres of 40°C water per half-hour (at a cold water temperature of 10°C). If the heating cartridges are used instead of gas for heating the boiler, the capacity is slightly reduced.

Always rinse out the heater before it is used, particularly if it has not been in operation for some time.

Note: The hot water is not intended for drinking or cooking. When the heater is in continuous use, it should be emptied approx. once a month, to ensure that a new air cushion is formed in the heater. The air cushion is essential for absorbing pressure surges in the heater.

Note: The warm water heater should always be drained of fresh water when there is a risk of frost and when the motorhome is not in use.

The warranty does not cover frost damage.

Draining the heater using the combined safety/drain valve:

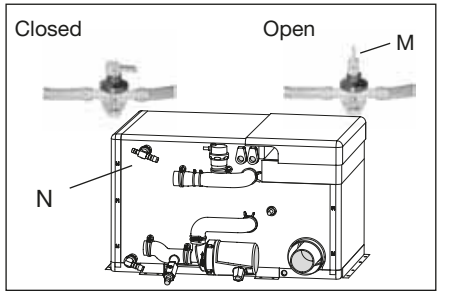
1. Switch off the freshwater pump

2. Open all water taps.

3. Then open the safety/drain valve by raising the yellow lever (M) to a vertical position.

4. The heater will now drain directly below the vehicle through the safety/drain valve hose. Check that all the water is emptied out (about 7-10 litres). Leave the valve in the open position until the next time the heater is used.

Note: Check that the automatic check valve (N) is open and is allowing air to enter the heater when it is being drained, and that the hose is not blocked.



THE HEATING CARTRIDGES

All Compact 3010s are fitted with two 230V heating cartridges with a maximum output of either 2100 or 3150W. Select the heating cartridge output on the control panel.

Always check that the input supply to the vehicle has the correct amperage in relation to the selected output.

Note these ratings are for the boiler only.

1050W requires a 6 amp fuse/supply.
2100W requires a 10 amp fuse/supply.
3150W requires a 16 amp fuse/supply.

THE CIRCULATION PUMP

A circulation pump is required to circulate the heated glycol fluid. A 12V circulation pump is fitted in the expansion tank.

An optional 230V circulation pump can be fitted on the boiler. Selection of circulation pump is made with a switch on the control panel. The room thermostat on the control panel controls the circulation pump, i.e. switches it on or off according to the amount of heat required.

Depending on the specification of your motorhome, the circulation pump for the heating system may be in the header tank, as shown in the diagram on page 123, or, an inline pump may be fitted on the side of the Alde heating appliance.

When the Alde inline pump is fitted care should be taken not to leave the pump in high speed service operation (setting 4-5) as this will considerably shorten the life of the pump. Settings 1-3 are advised for normal operation. Setting 4-5 are for removing air from the system only. Pumps found to have failed due to overheating will not be covered under warranty.

SYSTEM TEMPERATURE

The boiler is set to a system temperature of 80°C, i.e. the temperature of the glycol fluid as it circulates in the heating system.

AIR CIRCULATION

In order to achieve the best possible result from the principle of convected heat, it is important to allow air to circulate freely under bunks, and behind backrests and wall-mounted cabinets.

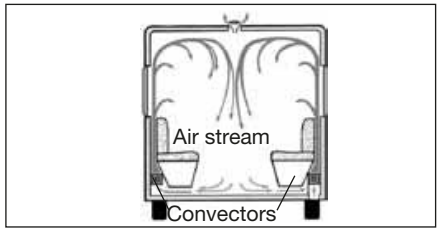
If the vehicle has a fitted carpet, ensure that the carpet does not obstruct the air supply to the radiators.

It is just as important that cushions or blankets do not interrupt the flow of air behind backrests and wall cabinets.

MAINTAINING THE HEATING SYSTEM

WINTER CAMPING

While camping during the winter, ensure that the flue is kept clear of snow and ice, since the inlet air to the LPG boiler enters through the flue. Do not start the LPG boiler until the flue is completely free of snow. A flue extension (part no. 3000 320) for fitting on the roof is recommended for winter camping.



THE HEATING SYSTEM

Regularly check the heating system's fluid level in the expansion tank. The level should be about 1cm above the minimum indicator in a cold tank. The heating system should be filled with a mixture of water and glycol.

For preference, use high quality ready mixed glycol (with inhibitor) intended for use in aluminium heating systems.

If using concentrated glycol, the mixture should consist of 50% water and 50% glycol. Any vessels used for the liquid must be spotlessly clean, and the pipes in the heating system must be free of contamination. This will prevent the growth of bacteria in the system.

The glycol mixture should be changed every second year, since its ability to protect against corrosion, for example, will deteriorate. The glycol content should be checked before topping up with new liquid. This will ensure that the concentration of glycol in the mixture is not too high.

If the fluid level in the expansion tank falls for reasons other than evaporation, please check all joints, drain cocks and bleeder screws to ensure that they are not leaking. If the glycol-water mixture leaks out, rinse with water and wipe up.

Never allow the heating system to stand empty of glycol.

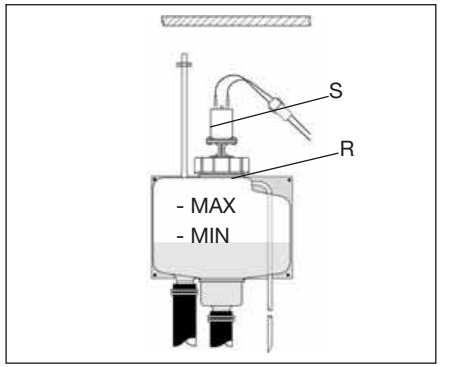
FILLING THE SYSTEM WITH GLYCOL FLUID

Note: Any vessels used to carry the fluid must be spotlessly clean and the pipes in the system must be free of contamination. This will prevent the growth of bacteria in the system.

The system is filled through the expansion tank, either manually or using the Alde filling pump which both tops up and bleeds the system. For manual filling, unfasten the circulation pump nut (R) and lift the pump (S) if fitted, out of the tank. Slowly pour the glycol mixture into the tank. Bleed the system.

Top up with more liquid if the level has fallen after bleeding. Bleed a newly filled system regularly during the first days the heating system is in operation.

HEADER TANK



Note: All Alde systems are installed and bled during the manufacturing stage to the requirements of Alde UK. However, further bleeding may be required after the first few operations of the system.

BLEEDING THE SYSTEM

Depending on how the pipes have been fitted, air pockets may form when the system is filled with glycol fluid.

A sign that there is air trapped in the system is that the heat released into the pipes only extends a metre or so from the boiler even though the circulation pump is operating.

In newly-filled systems, small air bubbles can form in the expansion tank, creating a murmuring sound. If the circulation pump is stopped for a few seconds, the bubbles will disappear.

Bleeding:

The boiler is fitted with an automatic bleeder, valve to bleed air out of the boiler. Start the LPG boiler. The circulation pump should be switched off.

Open the bleeder screws in the system (please refer to the motorhome technical book for their locations). Leave the bleeder screws open until they start discharging fluid, and then close them. Start the circulation pump and let it run for a while. Check that the pipes and radiators around the vehicle are heating up.

If they still fail to heat up, try the following:

To help bleed the remaining trapped air place the vehicle on a sloping surface with the front end downwards. Then open the bleed screw at the highest point at the rear until it starts discharging fluid, then close the the bleed screw. Turn the vehicle around and bleed the highest point at the front.

FAULT FINDING

The boiler does not start

1. No LPG? Incorrect type for conditions?
2. Is the cylinder valve and gas shut off valve on the manifold open?
3. If the boiler has not been operated for some time, or if the gas cylinder has been changed, it may take longer than normal to light the boiler.
4. Check that the boiler is connected to the electricity supply (> 11V).
5. Check that the fuse (T) for the boiler is intact (See fuses on page 71).
6. Check whether the electric connections on the boiler are securely in position.

If none of the above helps, contact a service workshop.

The heating cartridge is not working

1. Check that there is an electricity supply (230V ~) to the heating cartridge.
2. Check that the relays fitted to the boiler come on (a slight click can be heard from the relays when the heating cartridge is switched on at the control panel).

If none of the above helps, contact your dealer or Alde - See page 9 for contact numbers.

ALDE TECHNICAL DATA

Measurements/Weights

Boiler height:	310mm
Boiler depth:	340mm
Boiler width:	510mm
Weight:	14kg (without fluid)

Gas	**Propane**	**Butane**
Output 1:	3.3kW	3.8kW
Consumption	245g/h	275g/h
Output 2:	5.5kW	6.4kW
Consumption:	405g/h	460g/h
Pressure:	I3+ 28-30/37 mbar I3B/P 30 mbar	

Volume/Pressure/Temp

Liquid volume radiator water:	3.5 litre
Liquid volume warm water:	8.4 litre
Max pressure radiator water:	0.05MPa (0.5 bar)
Max pressure warm water:	0.3MPa (3.0 bar)
System temperature:	max 85°C

230V ~

Output element:	1 x 1050W
Output element (2 or 3kW):	1 x 2100W

12V DC

Current consumption:	1 amp (max)
Fuse:	3.15 amp+ / 3.15amp-

DOMETIC ABSORPTION REFRIGERATOR

Guide to these operating instructions

Before you start using the refrigerator,please read the operating instructions carefully.

These instructions provide you with the necessary guidance for the proper use of your refrigerator. Observe in particular the safety instructions. Observation of the instructions and handling recommendations is important for dealing with the refrigerator safely and for protecting you from injury and the refrigerator from damage. You must understand what you have read before you carry out a task.

Keep these instructions in a safe place close to the refrigerator so they may be referred to at any time.

Copyright protection

The information, texts and illustrations in these instructions are copyright protected and are subject to industrial property rights.

No part of these instructions may be reproduced, copied or utilised in any other way without written authorisation by Dometic GmbH, Siegen.

Explanation of symbols used in this manual

Warning notices

Warning notices are identified by symbols. A supplementary text gives you an explanation of the degree of danger.

Observe these warning notices rigorously. You will thus protect yourself and other people from injury, and the appliance from damage.

⚠ **DANGER**!

Danger indicates an imminent hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **WARNING!**

Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION!**

Caution indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION!

Caution (used without the safety alert symbol) indicates a potentially hazardous situation which, if not avoided, may result in damage to the appliance.

i **Information**

Information gives you supplementary and useful guidance when dealing with your refrigerator.

✿ **Environmental Tips**

Environmental tips gives you useful guidance for saving energy and disposal of the appliance.

Warranty

Warranty arrangements are in accordance with EC Directive 44/1999/CE and the normal conditions applicable for the country concerned.

For warranty or other maintenance, please contact our customer services department.

Any damage due to improper use is not covered by the warranty. The warranty does not cover any modifications to the appliance or the use of non-original Dometic parts. The warranty does not apply if the installation and operating instructions are not adhered to and no liability shall be entertained.

Limitation of liability

All information and guidance in these operating instructions were prepared after taking into consideration the applicable standards and regulations as well as the current state of the art. Dometic reserves the right to make changes at any time which are deemed to be in the interest of improving the product and safety.

Dometic will assume no liability for damage in the case of :

- Non-observation of the operating instructions
- Application not in accordance with the regulations or provisions
- Use of non-original spare parts
- Modifications and interferences to the appliance
- Effect of environmental influences, such as
  - temperature fluctuations
  - humidity

Customer services

Dometic offers a pan-European customer service network. Find your authorised customer service centre by calling the phone number indicated in the EuroService Network book, EuroService Network - which accompanies every refrigerator. You can also obtain the address information of the nearest customer service from www.dometic.com. When contacting Dometic Customer Services, please state the model, product number and serial number together with the MLC code, if applicable. You will find this information on the rating plate inside the refrigerator. We recommend that you note this data in the field provided on the front page of this operation manual.

Spare parts

Parts can be ordered throughout Europe from our customer services. Always give the model and product number when you contact the customer service! You will find this information on the rating plate inside the refrigerator.

✿ **Environmental notice**

Refrigerators manufactured by Dometic GmbH are free of CFC/HCFC and HFC. Ammonia (a natural compound of hydrogen and nitrogen) is used in the cooling unit as a coolant. Non-ozone-hazardous cyclopentane is used

as a propellant for manufacturing PU foam insulation.

In order to ensure that the recyclable packaging materials are re-used, they should be sent to the customary local collection system.

The appliance should be transferred to a suitable waste disposal company that will ensure re-use of the recyclable components and proper disposal of the rest. For eco-friendly draining of the coolant from all absorber refrigeration units, a suitable disposal plant should be used.

Energy-saving tips

- At an average ambient temperature of 25°C, it is sufficient to operate the refrigerator at middle thermostat setting.
- Where possible, always store precooled products.
- Do not expose the refrigerator to direct sunlight.
- Ensure that air circulation of the cooling unit is not obstructed.
- Defrosting at regular intervals saves energy (see “Defrosting”). Open the refrigerator door only for a short period of time when removing products.
- Run the refrigerator for about 12 hours before filling it.

SAFETY INSTRUCTIONS

Application according to regulations

This refrigerator is designed for installation in recreation vehicles such as caravans or motorhomes. The appliance has been type approval tested for this application in accordance with the EC Gas Directive.

The refrigerator is to be used solely for storing foodstuffs.

⚠ **WARNING!** The refrigerator is not suitable for the proper storage of medication. Please observe in addition the instructions in the medication package inserts.

User’s responsibility

Anyone operating the refrigerator must be familiar with the safe handling and understand the advice in these operating instructions.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been given instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. Cleaning and user maintenance shall not be made by children.
[EN 60335-2-24, 7.12]

Protection of children when disposing of the equipment

⚠ **WARNING!** When disposing of the refrigerator, detach all refrigerator doors and leave the storage racks in the refrigerator. In this way inadvertent entrapment and suffocation is prevented.

Working upon and checking the refrigerator

⚠ **WARNING!** Work on gas equipment, exhaust system and electrical facilities must be carried out by authorised personnel only. Substantial damage to property and / or injury to persons can arise through unprofessional procedures.

⚠ **DANGER!** Never use an unshielded flame to check gas bearing parts and pipes for leakage!

There is a danger of fire or explosion.

⚠ **WARNING!** Never open the absorber cooling unit! It is under high pressure.

There is a danger of injury.

Information on coolant

Ammonia is used as a coolant. This is a natural compound also used in household cleaning agents (1 litre of Salmiak cleaner contains up to 200g of ammonia - about twice as much as is used in the refrigerator). Sodium chromate is used for corrosion protection (1.8% by weight of the solvent).

In the event of leakage (easily identifiable from the strong odour), proceed as follows:

- Switch off the appliance.
- Air the room thoroughly.
- Inform authorised customer services.

i For your safety it was ascertained in an expert’s report that no impairment of health exists when the coolant is discharged.

Operating the refrigerator with gas

It is imperative that the operating pressure corresponds to the data specified on the rating plate of the appliance. Compare the operating pressure of the rating plate with the data specified on the pressure reducing valve of the liquid gas cylinder.

⚠ **WARNING!** Operating the appliance with gas is not permitted

- At petrol stations
- On ferry boats
- While transporting the caravan / motorhome by a transporter or breakdown vehicle.

There is danger of fire!

Leave the equipment switched off.

SAFETY INSTRUCTIONS WHEN STORING FOODSTUFFS

Instructions for storing food in a refrigerator:

No refrigerator of any kind can improve the quality of the food; refrigerators can only maintain the food’s quality for a short duration as from the time of storing it.

Please observe the following particular conditions for storing food in a refrigerator that is built into a vehicle:

- A change in the climatic conditions such as temperature fluctuations
- High temperatures inside the vehicle when it is closed and parked in direct sunlight (temperatures are possible up to 50°C)
- Use of the refrigerator during travel with the power supply of 12V DC
- A refrigerator built in behind a window and exposed to direct sunlight
- Storing the products too soon, i.e. shortly after starting up the appliance for use

Under these particular conditions the refrigerator cannot guarantee reaching the temperature needed for perishables.

Perishables include all products with a stipulated use-by date and a minimum storage temperature of +4°C or less, especially for meat, poultry, fish, sausages, pre-packed foods.

- Pack raw and cooked foods separately (e.g. in containers, aluminium foil, etc.).
- Only remove the outside packaging of single packs if all the necessary information, e.g. the use-by date, can also be read on the single packs.
- Do not leave cooled goods outside the refrigerator for too long.
- Place the foods with the next use-by date at the front, accordingly.
- Pack away any left-over food and eat at the first opportunity.
- Wash your hands before and after handling any food.

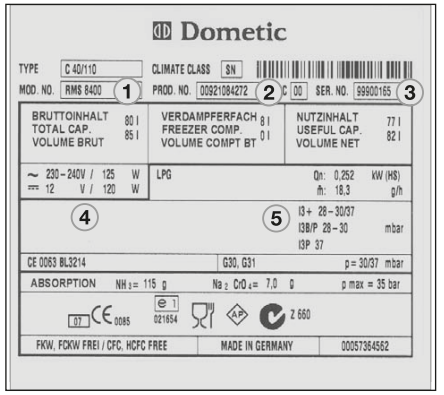
• Regularly clean the inside of the refrigerator.

Please observe the instructions and information regarding the use-by date on the outside packaging of the food.

Please observe section “Cleaning” of this instruction.

REFRIGERATOR RATING PLATE

The rating plate is to be found on the inside of the refrigerator. It contains all important details of the refrigerator. You can read off from this the model identification, the product number and the serial number. You will need these details whenever you contact the customer service centre or when ordering spare parts.



1 - Model Number

2 - Product Number

3 - Serial Number

4 - Electrical rating details

5 - Gas pressure

i The cooling unit’s performance is influenced by ambient temperatures. Please select the medium setting for ambient temperatures between +15°C and +25°C (refer to Setting of cooling compartment temperature). The unit operates within its optimum performance range.

Dometic refrigerators work according to the absorption principle. For physical reasons, an absorption system responds slowly to changes made by the thermostat controller, by loss of cooling energy through opening the door or during storing food. The devices meet the cooling performance requirements of the Climatic Class SN acc. to EN/ISO 7371 in the temperature range of +10°C to +32°C ambient temperature.

For temperatures below +10°C, winter covers should be installed. For ambient temperatures exceeding +32°C for a longer period of time, it is recommended installing Dometic additional fan (item no. 241 2985 -00).

Description of refrigerator

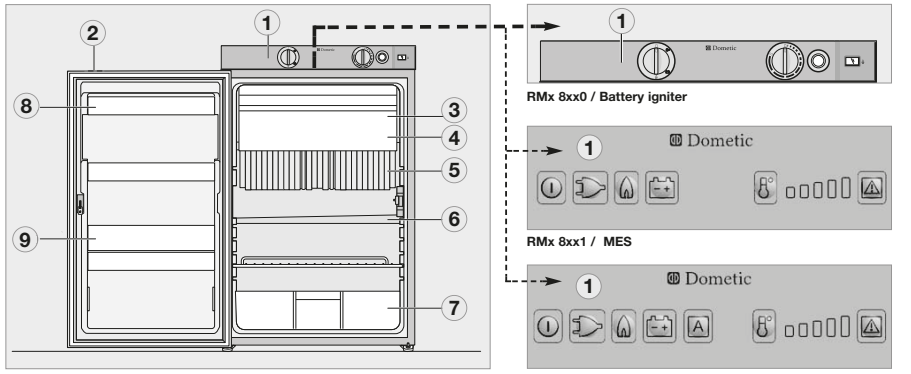


Fig. 5

1 - Operating controls

2 - Door locking button

3 - Freezer compartment (removable)

4 - Insertable grid shelf (available as option, to be used when freezer compartment is removed)

5 - Post-evaporator for cooling compartment

6 - Condensation water drain channel

7 - Vegetable bin

8 - Upper door shelf with flap, egg shelf available as option may be inserted

9 - Lower door shelf with bottle holders

Description of fridge freezer

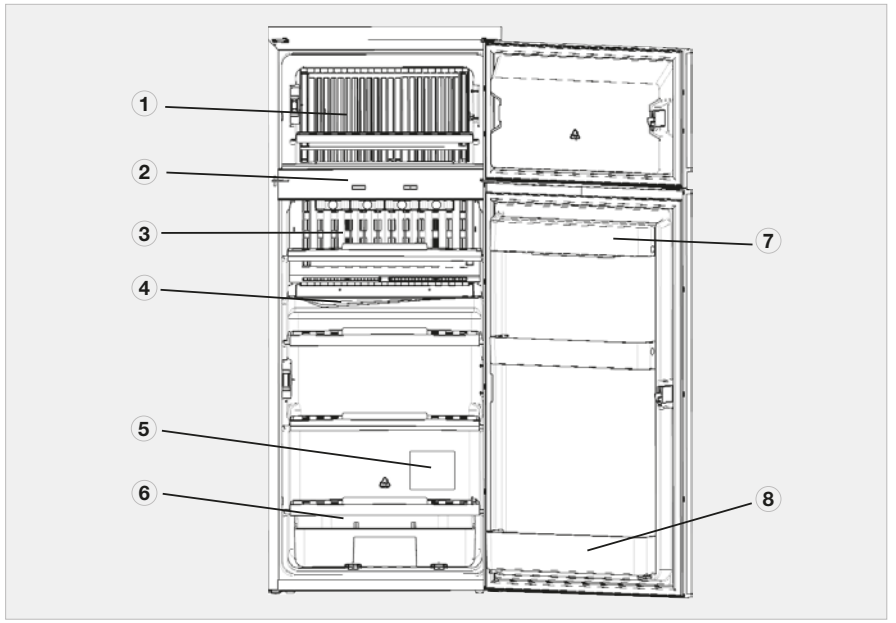


Fig. 3

1 - Freezer compartment

2 - Operating controls

3 - Post-evaporator for cooling compartment

4 - Condensation water drain channel

5 - Data plate

6 - Vegetable bin

7 - Upper door shelf with flap, egg shelf available as option may be inserted

8 - Lower door shelf with bottle holders

MANUAL ENERGY SELECTION / AUTOMATIC IGNITION (RM 8XX1) MES

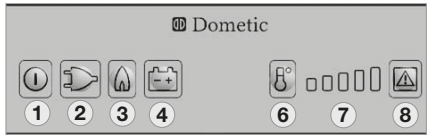


Fig. 8

1 - Power ON/OFF switch

2 - Energy selector button 230V ~

3 - Energy selector button GAS

4 - Energy selector button 12V =

6 - Temperature level selection

7 - Temperature level display

8 - Indicator LED failure / Reset button GAS FAILURE

Switching ON/OFF

- Switch ON by pressing button (1), 2s
- Switch OFF by pressing button (1), > 2s

230V AC operation

- Select “Mains voltage” by pressing button (2)
- Set temperature step by pressing button (6)

12V DC operation (vehicle’s battery)

- Select “Battery voltage” by pressing button (4)
- Set temperature step by pressing button (6)

Gas operation

- Select “Gas” by pressing button (3)
- Set temperature step by pressing button (6)

AUTOMATIC ENERGY SELECTION / AUTOMATIC IGNITION (RM 8XX5) AES

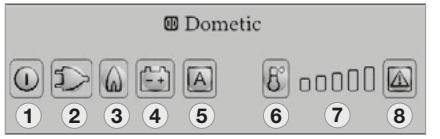


Fig. 9

1 - Power ON/OFF switch

2 - Energy selector button 230V ~

3 - Energy selector button GAS

4 - Energy selector button 12V =

5 - Selector button “AUTOMATIC”

6 - Temperature level selection

7 - Temperature level display

8 - Indicator LED failure / Reset button GAS FAILURE

Switching ON/OFF

- Switch ON by pressing button (1), 2s
- Switch OFF by pressing button (1), > 2s

Manual operation

- Select energy source with buttons (2,3,4)
- Set temperature step by pressing button (6)

Automatic operation

- Change over to “Automatic” with button (5)
  Automatical energy selection (if available)
  Sequence of priority: 1.) Solar (12V -)
  2.) 230V ~
  3.) 12V -
  4.) Liquid gas
- Set temperature step by pressing button (6)

RM 8XX1 MODELS MES APPLIANCES (MANUAL ENERGY SELECTION)

Electrical operation

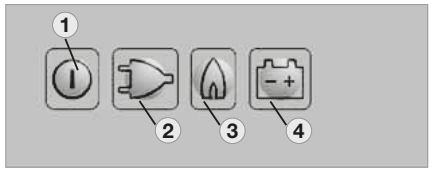


Fig. 16

To start the refrigerator, press button (1) for 2 seconds.

The refrigerator starts with the last selected type of energy.

230V operation :
Press button (2) :

12V operation :
Press button (4) :

Gas operation

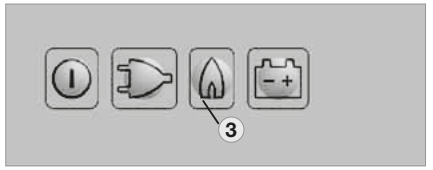


Fig. 17

Gas operation :

Press button (3) :

The ignition process is activated automatically by means of an automatic igniter.

i The flame extinguishes after reaching the preset cooling compartment temperature and ignites again if the cooling compartment temperature increases again. If the flame is not lit after the first ignition attempt, the automatic igniter repeats the ignition twice (duration 30 s) at time intervals of 2 minutes. If the flame is not lit afterwards, a fault is indicated.

Setting of cooling compartment temperature

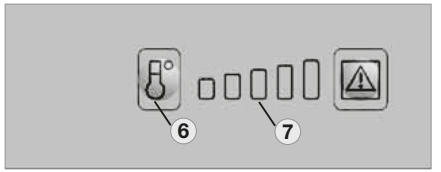


Fig. 18

Select the desired cooling compartment temperature by pressing button (6) .

The LED display (7) of the selected temperature setting is illuminated.

The scale starts with MIN position at the left LED position (small bar = highest temperature) and climbs up to MAX position at the right LED position (large bar = lowest temperature).

Note: The temperature levels do not relate to absolute temperature values.

RM 8XX5 MODELS

Manual operation

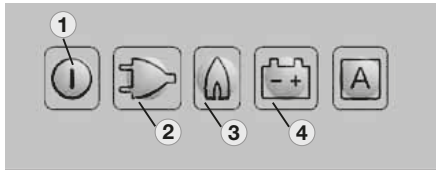


Abb. 19

To start the refrigerator, press button (1) for 2 seconds.

The refrigerator starts with the last selected type of energy.

230V operation :
Press button (2) :

12V operation :
Press button (4) :

Gas operation :
Press button (3) :

Automatic operation

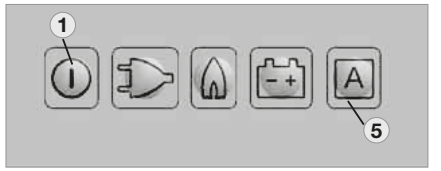


Fig. 20

To start the refrigerator, press button (1) for 2 seconds.

The refrigerator starts with the last selected type of energy.

Automatic operation :

Press button(5) : A

Upon switching on, the electronics automatically selects one of the three possible energy types: 230V - 12V - liquid gas. The control electronics automatically ensures that the refrigerator is supplied with the optimum source of energy in each respective case.

Sequence of priority: 1.) Solar (12V -)
2.) 230V ~
3.) 12V -
4.) Liquid gas

i If sufficient mains voltage is available (more than 195 V), this power source is selected as prime option. If a solar system capable of powering the refrigerator is installed, the solar 12V supply takes priority. The 12V operation is otherwise only effective while the engine is running.

According to the sequence of priority the electronics selects GAS as energy source only, if both of the electrical energy source are not available.

Manual operation is possible at any time.

For Setting of cooling compartment temperature see point “4.7.2”

Refuelling while in AES mode operation

i In order to prevent unintended switching to gas operation during refuelling, the electronic system starts gas operation of the refrigerator after the motor has been turned off for 15 minutes. During this period the appliance is ready for operation (“stand-by”). The temperature level LEDs do not light then while all other indicators remain active.

⚠ **WARNING!** The use of unshielded flames is prohibited in petrol station environments.

Should the refuelling stop last longer than 15 minutes, the refrigerator has to be switched off or switched over to another energy type.

Additional features (MES / AES)

- The brightness of the display reduces after a few seconds if no other buttons are pressed. The indicator lights again if a button is pressed. Press the button again to activate the required function.
- Failures are indicated by flashing of the failure indicator LED.
- Should the door be kept open for too long (more than 2 minutes), an acoustic signal is initiated (pulsing whistle tone).
- Should the electronic control detect any failure, an acoustic signal will sound (pulsing whistle tone). At the same time the display starts flashing (for trouble-shooting, please refer to page 142).

Gas operation with internal batteries (optional)

An optional battery compartment in the electronics case for internal (self-contained) power supply of the electronics is available for the model variants RM 8xx1 and RM 8xx5 (appliances with electronics).

Battery compartment *Fig. 21*

Load the battery compartment with batteries (8 x AA 1.5 V) before operating the refrigerator. All operating modes can be selected while the on-board 12 V DC power supply is active. The internal voltage is disconnected.

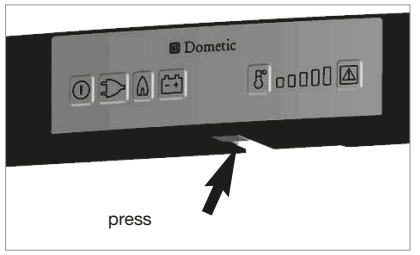
If the on-board 12 V DC power supply is not present or there is an interruption of the mains power supply during operation, the electronics automatically switch to the internal (battery) power supply.

The refrigerator can now only be operated in the gas mode. All LED indicators except the GAS LED are not lit during operation with internal batteries. The GAS LED flashes every 15 seconds.

If a button is pressed, the temperature level LEDs (7) also light. If the battery voltage is too low, an acoustic signal (whistle tone) sounds every 15 seconds. Then replace the batteries in the battery compartment.

Inserting / changing the batteries

Switch off the refrigerator, as described in section “Shutting of the refrigerator”.



Opening battery compartment *Fig. 22*

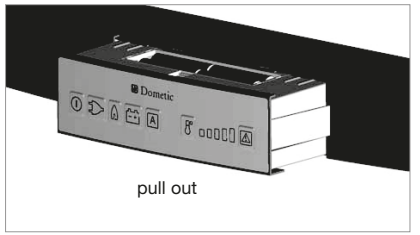


Fig. 23

i Batteries (8 x AA 1.5V) are not included!

⚠ CAUTION!

- Observe the correct polarity!
- Do not connect non-rechargeable batteries to a charger.
- Remove rechargeable batteries from the battery compartment before charging.
- Avoid short circuits on the contacts in the battery compartment!
- Remove discharged batteries.
- Remove the batteries from the battery compartment if the refrigerator will not be used for a long time.
- Do not mix different types of batteries.

Explanation of operating controls Fridge / Freezer models

The control panel buttons are not accessible when the refrigerator door is closed. Open the bottom door to reach the operating buttons.

Depending on the door opening direction, there are two LEDs on the left or right edge of the control panel. The outer LED (1) indicates that the refrigerator is operational (blue). The other LED (2) lights red in the event of a fault.

Indicator LEDs *Fig. 4*

Refrigerators for self-contained (gas) operation contain two battery compartments in the control panel which are located on the left and right next to the button bar.

Operating controls without battery compartments *Fig. 5*

Operating controls with battery compartments (L, R)

Manual energy selection / automatic ignition (RMD 8xx1) MES

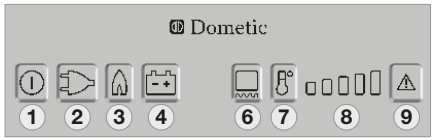


Fig. 7

1 - Power ON/OFF switch
2 - Energy selector button 230V ~
3 - Energy selector button GAS
4 - Energy selector button 12V =
6 - Frameheating
7 - Temperature level selection
8 - Temperature level display
9 - Indicator LED failure / Reset button GAS FAILURE

Switching ON/OFF

- Switch ON by pressing button (1), 2s
- Switch OFF by pressing button (1), > 2s

230V AC operation

- Select “Mains voltage” by pressing button (2)
- Set temperature step by pressing button (7)

12V DC operation (vehicle’s battery)

- Select “Battery voltage” by pressing button (4)
- Set temperature step by pressing button (7)

Gas operation

- Select “Gas” by pressing button (3)
- Set temperature step by pressing button (7)

Automatic energy selection / automatic ignition (RMD 8xx5) AES

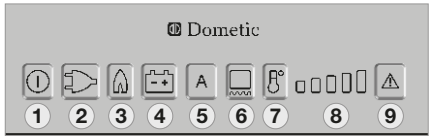


Fig. 8

1 - Power ON/OFF switch
2 - Energy selector button 230V ~
3 - Energy selector button GAS
4 - Energy selector button 12V =
5 - Selector button “AUTOMATIC”
6 - Frameheating
7 - Temperature level selection
8 - Temperature level display
9 - Indicator LED failure / Reset button GAS FAILURE

Switching ON/OFF

- Switch ON by pressing button (1), 2s
- Switch OFF by pressing button (1), > 2s

Manual operation

- Select energy source with buttons (2,3,4)
- Set temperature step by pressing button (7)

Automatic operation

- Change over to “Automatic” with button (5)
  Automatical energy selection (if available)
  Sequence of priority: 1.) Solar (12V -)
  2.) 230V ~
  3.) 12V -
  4.) Liquid gas
- Set temperature step by pressing button (7)

Gas operation with internal batteries (optional)

An optional battery compartment in the electronics case for internal (self-contained) power supply of the electronics is available for the model variants RMd 85x1 and RMD 85x5 (appliances with electronics).

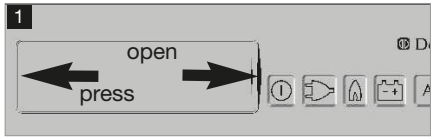
Left battery compartment *Fig. 14*

Load the battery compartment with batteries (8 x AA 1.5 V) before operating the refrigerator. All operating modes can be selected while the on-board 12 V DC power supply is active. The internal voltage is disconnected.

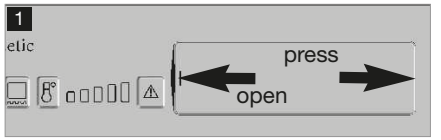
If the on-board 12 V DC power supply is not present or there is an interruption of the mains power supply during operation, the electronics automatically switch to the internal (battery) power supply. The refrigerator can now only be operated in the gas mode.

All LED indicators except the GAS LED are not lit during operation with internal batteries. The GAS LED flashes every 15 seconds. If a button is pressed, the temperature level LEDs (7) also light.

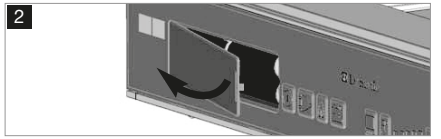
If the battery voltage is too low, an acoustic signal (whistle tone) sounds every 15 seconds. Then replace the batteries in the battery compartment.



Opening left battery compartment *Fig. 15*



Opening right battery compartment *Fig. 16*



i Batteries (8 x AA 1.5V) are not included!

⚠ CAUTION!

- Observe the correct polarity!
- Do not connect non-rechargeable batteries to a charger.
- Remove rechargeable batteries from the battery compartment before charging.
- Avoid short circuits on the contacts in the battery compartment!
- Remove discharged batteries.
- Remove the batteries from the battery compartment if the refrigerator will not be used for a long time.
- Do not mix different types of batteries.

Frame heating

All models are equipped with a frame heating (12VDC/3,5W) around the freezer compartment. During summer months with high temperatures and humidity the metal frame may have water droplets forming. To evaporate these droplets switch on the frame heating with button (6).

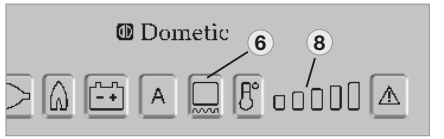


Fig. 18

The operating time of the frame heater can be set to 2 hours, 5 hours or continuous operation. After selecting the operating time using the button (6), the temperature level indicator (8) is extinguished for a short time to show the set operating time for a few seconds. The display then returns to the temperature level indicator.

Operating time: 2 hours
Press button (6) once Display

Operating time: 5 hours
Press button (6) twice Display

Permanent Operation
Press button (6) three times Display

⚠ CAUTION!

In order to prevent discharge of the onboard battery, change the frame heater from continuous operation to another operating time or switch it off.

i The frame heater is active for 30 minutes after switching on and then switches itself off and on again at time intervals of 5 minutes.

Refrigerator compartments

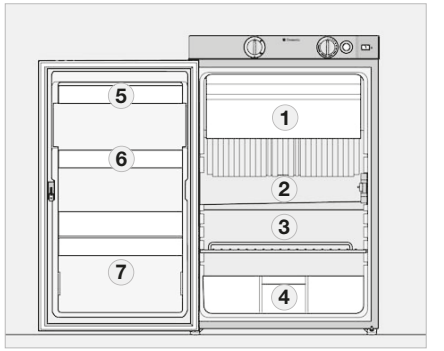


Fig. 37

1 - Freezer compartment :
already frozen food (deep-frozen food)

2 - Middle compartment:
Dairy products, convenience food

3 - Bottom compartment:
Meat, fish, food for defrosting

4 - Vegetable compartment:
Salads, vegetables, fruit

5 - Top door shelf:
Eggs, butter

6 - Middle door shelf:
Cans, dressings, ketchup, jam

7 - Bottom door shelf (drinks compartment):
Drinks in bottles or bags

Removable freezer compartment

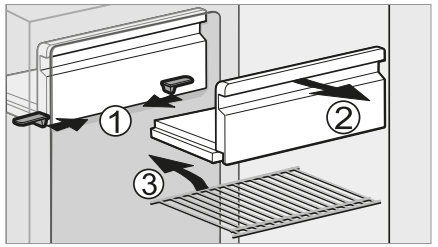


Fig. 32

To enlarge the cooling compartment, just remove the freezer compartment.

1. Unlock the freezer compartment on both sides.
2. Pull the freezer compartment out.

Store the freezer compartment safely in order to prevent damage

i Once the freezer compartment is removed, an additional storage rack (3.) may be installed. The storage rack is a piece of extra equipment and may be obtained by Dometic.

Door locking

⚠ CAUTION!

As a basic rule, shut and lock the refrigerator before you start your journey!

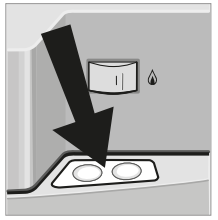


Fig. 24

Fig. 25

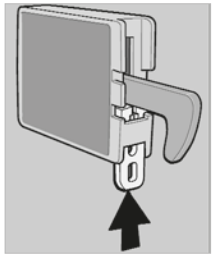
Open the door by pressing the locking button and pull open (see Fig. 24).

Shut the door again by pushing it to close. The snapping into the lock can be heard.

While the vehicle is parked, the locking hook may be fixed to facilitate opening of the door (Fig. 26-27).

Fastening and releasing the, door lock hook when parking the vehicle

If the vehicle is parked for a longer period of time, the locking hook may be clamped by means of a lockbar. The door may now be opened by just pulling it without need of pressing the locking button.



Fastening *Fig. 26*

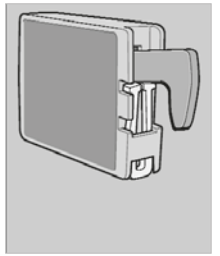
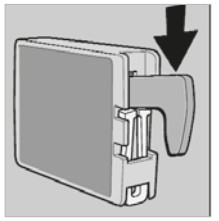


Fig. 27



Releasing *Fig. 28*

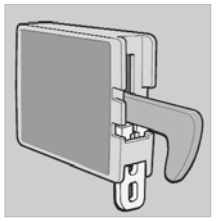


Fig. 29

Lighting

The interior lighting is controlled using a door contact. Should the door be kept open more than 2 minutes, an acoustic signal is initiated (pulsing whistle tone). (except for models with battery igniter).

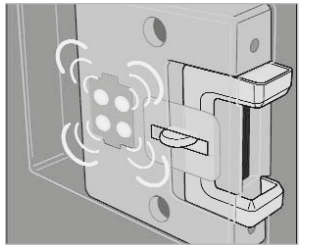


Fig. 30

i Please contact the authorized Dometic Service if a failure occurs.

Positioning the storage racks

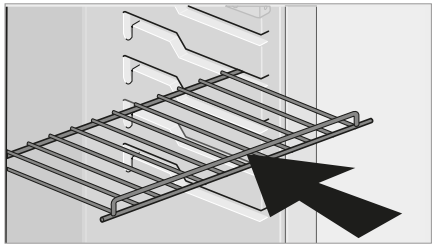


Fig. 31

The storage racks may be pulled out by smoothly lifting them and may be positioned as desired.

Refrigerator compartments

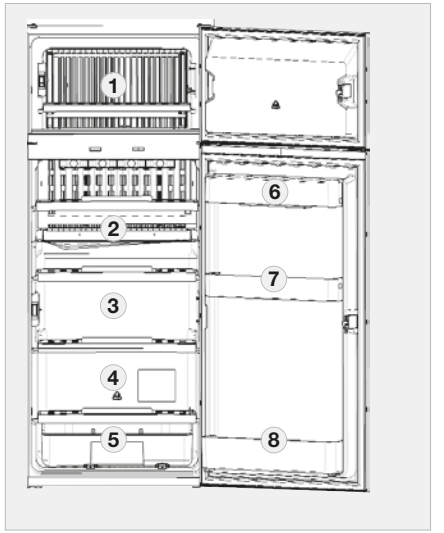


Fig. 29

1 - Freezer compartment :
already frozen food (deep-frozen food)

2 - Top compartment:
convenience food

3 - Middle compartment:
Dairy products, convenience food

4 - Bottom compartment:
Meat, fish, food for defrosting

5 - Vegetable compartment:
Salads, vegetables, fruit

6 - Top door shelf:
Eggs, butter

7 - Middle door shelf:
Cans, dressings, ketchup, jam

8 - Bottom door shelf (drinks compartment):
Drinks in bottles or bags

Shutting off the refrigerator

- Switch off the refrigerator by pressing button (1) (s. 4.5). Keep button (1) pressed for 3 seconds. The display disappears and the appliance is fully switched off .

- Release the locking mechanism (Fig. 30-31) of the door lock by pushing it and shift it to the front. If the door is shut in this position, a small gap is nevertheless kept open to prevent formation of mildew.

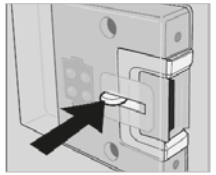


Fig. 30

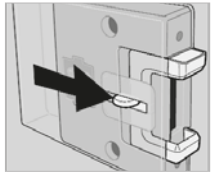


Fig. 31

- If the refrigerator is to be taken out of service for an extended period of time, close the onboard shut-off valve and the cylinder valve.

Defrosting

As time goes by, frost builds up on the fins inside the refrigerator. A layer of frost thicker on one side may occur and does not represent a malfunction. When this layer of frost is about 0.118 inches (3 mm) thick, the refrigerator should be defrosted.

- Switch off the refrigerator, as described in section 4.14 Shutting of the refrigerator.
- Remove all food and the ice cube tray.
- Leave the refrigerator door open to allow air to enter and to prevent formation of mildew.
- After defrosting (freezer compartment and fins free of frost), wipe both cooling compartments dry with a cloth.

Storing food and making ice cubes

Storing products in the cooling compartment

- Switch the refrigerator on approx. 12 hours before filling it.
- Always store pre-cooled foods in the refrigerator. Make sure that the food is well cooled when it is bought and also when transporting it. Use insulated cooling bags.
- Open the refrigerator door only for a short period of time when removing products.
- Products must be packed - best of all in closed containers, wrapped in aluminium foil or similar - and stored separately from each other, in order to prevent drying out or odours.
- Allow foods that have been warmed up to cool down before storing.
- Avoid storing products in the refrigerator that could emit volatile flammable gases.
- Do not overfill the storage grids and compartments to prevent obstructing the internal air circulation.
- Maintain a clearance of approx. 5 - 10 mm between chilled products and post-evaporator (“cooling fins”).
- Do not expose the refrigerator to direct sunlight. Please bear in mind that the temperature inside a closed vehicle increases sharply if exposed to sunlight and that this can reduce the efficiency of the refrigerator.
- Ensure that air circulation of the cooling unit is not obstructed. Keep the ventilation grilles free from obstructions.
- The freezer compartment is suitable for making ice cubes and for short-term storage of frozen food. It is not suitable as a means of freezing foods.

When ambient temperatures are lower than +10°C and the refrigerator is exposed to these temperatures for extended periods of time, an even regulation of freezer temperature cannot be guaranteed for system related reasons. This can cause the temperature in the freezer to rise and the stored goods to melt.

Making ice cubes

Ice cubes are best frozen overnight. At night, the refrigerator has less work to do and the unit has more reserves.

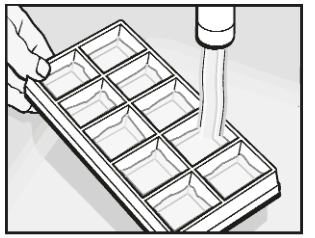


Fig. 27

1. Fill the ice cube tray with drinking water.

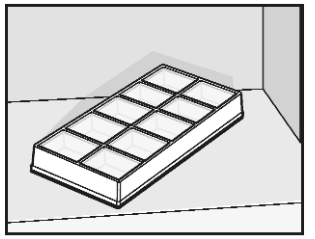


Fig. 28

2. Place the ice cube tray in the freezer compartment.

⚠ CAUTION!

Only use drinking water!

Shutting off the refrigerator

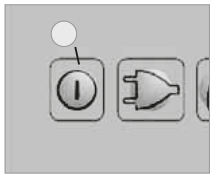


Fig. 41

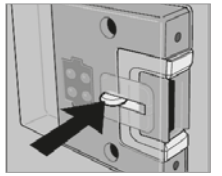


Fig. 42

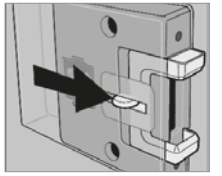


Fig. 43

- For battery igniter models, set energy selector switch (1) to position “OFF”. The appliance is switched off (Fig. 40).
- Switch off MES and AES models by pressing button (2). Keep button (2) pressed for 3 seconds. The display disappears and the appliance is fully switched off (Fig. 40).
- Release the locking mechanism of the door lock by pushing it and shift it to the front. If the door is shut in this position, a small gap is nevertheless kept open to prevent formation of mildew.
- If the refrigerator is to be taken out of service for an extended period of time, close the onboard shut-off valve and the cylinder valve.

Winter operation

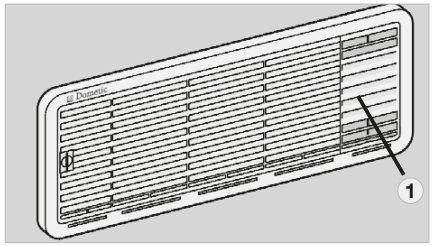


Fig. 35

In winter, check that the ventilation grilles and the exhaust duct system (1) have not been blocked by snow, leaves, etc.

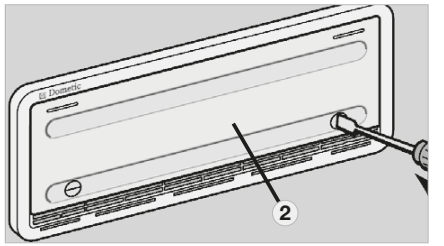


Fig. 36

When the outside temperature falls below +10°C, the winter cover should be fitted. This protects the unit from excessively cold air which could have adverse effects on the performance of the unit

i You should also attach the winter cover if the vehicle is taken out of service for a longer period of time or while it is being cleaned from the outside.

Winter operation (fridge freezer models)

In winter, check that the ventilation grilles and the exhaust duct system (1) have not been blocked by snow, leaves, etc.

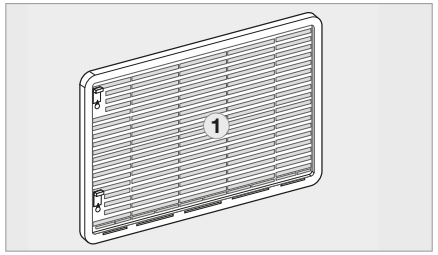


Fig. 32

When the outside temperature falls below +10°C, the winter cover (2) should be fitted. This protects the unit from excessively cold air which could have adverse effects on the performance of the unit.

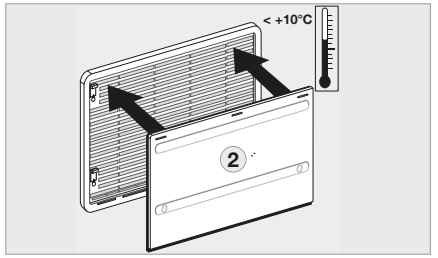


Fig. 33

You should also attach the winter cover if the vehicle is taken out of service for a longer period of time or while it is being cleaned from the outside.

TROUBLESHOOTING

Failure: The refrigerator does not cool sufficiently.

Possible cause	Action you can take
Inadequate ventilation to the unit	Check that the ventilation grilles are not covered
Thermostat setting is too low	Set thermostat to a higher level
The condenser is heavily frosted	Check that the refrigerator door closes properly
Too much warm food has been stores inside within a short period of time	Allow warm food to cool down before storage
The appliance has been running for only a short period of time	Check whether the cooling compartment works after approx 4-5 hours
Ambient temperatures too high	Regularly remove ventilation grilles.

Failure: The refrigerator does not cool in gas operation mode.

Possible cause	Action you can take
Gas cylinder empty	Change gas cylinder
Is the upstream shut-off device open?	Open shut-off device
Air in the gas pipe?	Switch off the appliance and start again. Repeat this procedure 3-4 times, if necessary.

Failure: The refrigerator does not cool in 12 V operation.

Possible cause	Action you can take
On-board fuse defective	Fit new fuse
On-board battery displaced	Check battery, charge it
Engine not running	Start engine
Heating element defective (please refer to failure indication)	Please inform the Dometic Customer Services.

Failure: The refrigerator does not cool in 230 V operation.

Possible cause	Action you can take
On-board fuse defective	Fit new fuse
Vehicle not connected to mains supply voltage	Make a connection to a mains power supply
AES: Gas operation despite connection to the mains supply voltage?	Appliance switches to gas operation due to insufficient mains supply voltage (automatically switches back to 230 V operation)
Heating element defective (please refer to failure indication	Please inform Dometic Customer Services

Information on failure display and trouble-shooting

- Refrigerators with an electronics system (MES, AES) indicate the occurence of a malfunction by the LED or display flashing.
- If a malfunction occurs, the indicator LED “Failure” (8) flashes simultaneously. In the case of AES models an acoustic alarm sounds.

Before notifying the authorised Service Center, please check whether:

- the instructions in section “Operating the refrigerator” have been observed.
- the refrigerator stands level.
- it is possible to operate the refrigerator with any available power source.

Status indicators

MES *Fig. 51*

1 - Button ON / OFF

2 - Energy selector switch 230 V AC

3 - Energy selector switch GAS

4 - Energy selector switch 12V DC

6 - temperature level button

7 - temperature level display

8 - fault LED / GAS FAULT reset button

Operation with on-board 12 v power supply

Indicator	Fault	Remedy
(2) and (8) flashing and acoustic signal 20s	**230 V mode:** "230V" not available or voltage too low	Check mains power connection, mains voltage, fuse
(4) and (8) flashing and acoustic signal 20s	**12 V mode:** "12V" not available or voltage too low	Check 12V connection, on-board battery, fuse
(3) and (8) flashing and acoustic signal 20s	**Gas mode:** Flame not ignited	Check gas supply (gas bottle, gas valve) Press the **(8)** button after clearing the fault
Acoustic signal, 15s at two minute intervals	Interior lighting is switched on	Close door, check door contact
(2) and (7) flashing and acoustic signal 20s	**230 V mode:** 230V heating element defective	Arrange replacement of 230V heating element, contact Customer Service
(4) and (7) flashing and acoustic signal 20s	**12 V mode:** 12V heating element defective	Arrange replacement of 12V heating element, contact Customer Service
(7) flashing and acoustic signal 20s	Temperature sensor without contact or defective	Contact Customer Service
(3) and (7) flashing and acoustic signal 20s	Burner defective or cooling unit defective	Check burner, burner nozzles, if necessary contact Customer Service and arrange replacement

Operation with batteries (internal power supply)

Indicator	Fault	Remedy
(3) and (8) flashing brightly	Flame not ignited	Check gas supply (gas bottle, gas valve) Press the **(8)** button after clearing the fault
(3) and (7) flashing brightly	Burner defective or cooling unit defective	Check burner, burner nozzles, if necessary contact Customer Service and arrange replacement
Acoustic signal at 15 second intervals	Undervoltage detection (internal batteries)	Replace batteries
Automatic switching from external to internal power supply does not function (absence of the onboard 12V power supply for the electronics)	Refrigerator does not function, gas operation not possible although the batteries are inserted	Switch off the refrigerator and start again The onboard power supply was interrupted during the starting of the gas operation **Note:** No automatic switching is performed during the ignition.

Dometic Waeco CB-40 Cool Box

The CB-40 is suitable for cooling and freezing foodstuffs. The Cool Box has an under-voltage protection mechanism. To protect the battery, the Cool Box switches off automatically if the voltage is insufficient. When the voltage is sufficient again, it switches on again.

Note: Before starting your new Cool Box for the first time, you should clean it inside and outside with a clean damp cloth for hygienic reasons. (see also “Cleaning and maintenance” below).

Note: The cool box is powered by 12V only.

Operating the Cool Box

Switch the Cool Box on by turning the control knob to the right. (Fig 1.) After switching on, it takes approximately 60 seconds before the compressor starts up.

The desired temperature can be set by adjusting the control knob between minimum (warmest) and maximum (Coolest). Ensure that the objects placed in the Cool Box are suitable for cooling to the selected temperature.

Fig 1.

Warning: Ensure that food or liquids in glass containers are not excessively refrigerated. Liquids expand when they freeze and can thus destroy the glass containers.

The cooling capacity can be influenced by

- The ambient temperature,
- The amount of food to be conserved,
- The frequency with which the lid is opened.

The temperature in the Cool Box varies from the top to the bottom. The warmest at the top just under the lid and the coolest at the bottom immediately over the base.

Conserving foodstuffs

You can conserve foodstuffs in the Cool Box compartment. The time for which the food can be conserved in this way is usually stated on the package. Observe the temperature information and best before date on the food packaging.

Note: Food which can easily absorb tastes and odours, and liquids and products with a high alcohol content, should be conserved in airtight containers.

Warning: Do not re-freeze products which are defrosting or have been defrosted; consume them as soon as possible.

Defrosting the Cool Box.

Humidity can form frost in the interior of the Cool Box or on the vaporiser. This reduces the cooling capacity. Defrost the device in good time to avoid this.

Warning: Never use hard or pointed tools to remove ice or loosen objects which have frozen in place.

1. Take out the contents of the Cool Box.
2. Place them in another Cool Box to keep them cool, if necessary.
3. Set the knob to “0”.
4. Leave the lid open.
5. Wipe off the defrosted water.

Switching off the Cool Box

If you do not intend to use the Cool Box for a long time, proceed as follows:
Turn the knob to “0”.
Clean the inside. (see the “Cleaning and maintenance” below).
Leave the lid open to avoid unpleasant odours building up.

Cleaning and Maintenance

Warning: Do not use abrasive cleaning agents or hard objects during cleaning as these can damage the Cool Box. Never use brushes, scouring pads or hard or pointed tools to remove ice or to loosen objects which have frozen in place.

1. Clean the interior of the Cool Box regularly as soon as it becomes dirty with a damp cloth.
2. Wipe the Cool Box dry with a clean cloth after cleaning.

Energy saving tips

- Allow food to cool down first before placing it in the Cool Box.
- Do not open the lid more often than necessary.
- Do not leave lid open for longer than necessary.
- Defrost the Cool Box as soon as a layer of ice forms.
- Avoid unnecessarily low temperatures.
- Clean the condenser of dust impurities at regular intervals.
- Clean the lid seal regularly.

COOKER 3 BURNER WITH COMBINED GRILL AND OVEN /

COOKER 3 BURNER + ELECTRIC HOTPLATE WITH SEPARATE GRILL AND OVEN

Burner operation

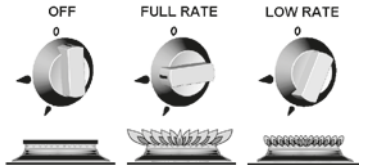


Fig. 1

IMPORTANT

- Although each burner will support pans from 10 to 22cm, care should be taken not to overload the appliance as performance may be reduced.
- The following pan sizes are the maximum:
  - Auxiliary Burner:- Ø200mm Semi-Rapid Burner:- 2x Ø200mm or 1x Ø220mm with 1x Ø180mm
  Electric Hotplate:- Ø180mm
- When using small pans the flames should not spread beyond the base of the pan as this will reduce the efficiency of the burner.
- Avoid old or misshapen pans as these may cause instability.
- The lid must be opened fully prior to using the hotplate burners.

Using the Hotplate Gas Burners

1. Ensure gas cylinder is connected and turned on and the shut off valve at the manifold is open. In the event of a gas smell turn off at gas cylinder and contact supplier.
2. Flame supervision: Each burner is controlled individually and is monitored by a thermocouple probe. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
3. To light: Push in the control knob and turn to full rate – see Fig.1. Hold a lighted match or taper to the burner and push the control knob in and hold. It is necessary to hold the knob depressed after the burner has ignited for approximately 10 - 15 seconds, to allow the thermocouple probe to reach temperature, before releasing the knob. Should the flame go out when the knob is released, the procedure should be repeated holding the knob depressed for slightly longer.
4. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. If the burner has not lit within 15 seconds the control knob should be released and the burner left for at least 1 minute before a further attempt to ignite the burner.
5. For simmering, turn the knob further anti-clockwise to the low rate position.
6. To turn off: Turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished using the hotplate burners.

OPERATION

Using the Electric Hotplate

Ensure the electricity is switched on.

The hotplate control is numbered from 1 to 6. To turn it on, rotate the knob either clockwise or anti-clockwise to the required position. Position 1 is the coolest setting.

To turn the hotplate off, rotate the knob until the line or pointer on the knob lines up with the zero on the control panel.

The hotplate is a sealed construction and transfers heat through conduction. For maximum efficiency a correctly sized pan with a flat heavy gauge base should be used. Pan size should be the same or slightly larger (up to 1" / 2.5cm oversize).

Before using your hotplate for the first time, we recommend that you prime and then season it.

To prime the Hotplate

Switch on the hotplate for a short period, without a pan, to harden and burn off the coating.

Use a medium to high setting for 3 – 5 minutes. A non toxic smoke may occur during this process. Allow it to cool, then season.

To season the Hotplate

First heat the hotplate for 30 seconds on a medium setting, then switch off. Pour a minimal amount of unsalted vegetable oil onto a clean dry cloth or paper towel, and apply a thin coat of oil to the hotplate surface. Wipe off any excess oil, then heat the hotplate on a medium setting for 1 minute. Occasional seasoning will help to maintain the Hotplate's appearance.

WARNING

- Glass lids may shatter when heated. Turn off the hotplate and allow it to cool before closing the glass lid.
- Remove all spillage from the surface of the glass lid before opening.
- The glass lid has the tendency to snap shut towards the end of lowering.

This is caused by the travel lock action of the hinges as it is activated.

Make sure all fingers are removed from appliance when closing the lid.

CAUTION : The use of the electric hotplate and gas hobs will generate heat. We recommend, to avoid excess build-up of heat around the cooker area, the window is left opened when cooking to allow for additional ventilation.

IMPORTANT

- Depending on specification, your appliance may be fitted with a glass lid shut-off system, which cuts off the power to all hotplate burners (gas and electric) if the lid is closed.
- Ensure the glass lid is in the open and upright position before turning on the hotplate burners.
- Not all models are fitted with the shut-off system.

OPERATION

WARNING

- THE GRILL MUST ONLY BE USED WITH THE DOOR OPEN.
- On combined grill and oven cookers THE HEAT DEFLECTOR BELOW THE FASCIA SHOULD BE PULLED OUT PRIOR TO LIGHTING THE GRILL. NEVER ADJUST THE HEAT DEFLECTOR POSITION WITHOUT USING HAND PROTECTION I.E. OVEN GLOVES. See Fig 3

On separate grill and oven cookers the grill area can get hot when the oven is in use, even if the grill is switched off.

- Care should be taken when removing pans from the grill, i.e. use of oven gloves, and by making use of the removal grill pan handle.

IMPORTANT

- The grill pan supplied is multi functional, for use in grill or oven.
- The handle design allows removal or insertion whilst the pan is in use.

- Always remove the handle when the pan is in use.
- The grill MUST only be used with the door open.

Using the Grill

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
2. To light: Open door, push in the control knob and turn to full rate – see Fig 1 (page 137). Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10 -15 seconds before release.

If the burner goes out, repeat procedure holding control knob for slightly longer.

3. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the grill left for at least 1 minute before a further attempt to ignite the burner.
4. **Note:** the grill must only be used with the door open.
5. On first use of the grill, it should be heated for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.
6. Although the grill does heat up quickly, a few minutes preheat is recommended.
7. Flame Failure Device (FFD): the grill burner is fitted with a flame sensing probe, which will automatically cut off the gas supply in the event of the flame going out. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
8. It is normal for the flames on this burner to develop yellow tips as it heats up.
9. A reversible grill pan trivet enables the correct grilling height to be achieved.

Fast Toasting	trivet in high position
Grilling Sausages	trivet in high position
Grilling Steak/Bacon	trivet in high position
Grilling Chops, etc	trivet in low position
Slow Grilling	trivet removed

10. To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished grilling.

IMPORTANT:

- The pan supplied with the appliance is multi functional, for use either whilst grilling or when using the oven.
- The handle design allows removal or insertion whilst the pan is in use.

Warning: Pans must not touch the glass lid.

Advice: To avoid heat build up around the hob open the kitchen window slightly to allow the heat to dissipate.

OPERATION

IMPORTANT

- The appliance is fitted with a cooling system. The cooling fans should automatically switch on a couple of minutes after the grill and/or oven is turned on, and will remain on even after the appliance has been switched off.
- The fans should automatically switch off a few minutes after the appliance has been switched off, when the front of the appliance has cooled sufficiently.
- A constant 12V supply is necessary at all times to ensure the cooling system operates correctly.

Using the Oven

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
2. To light: Open door, push in the control knob and turn to full rate (240°C). Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10 -15 seconds before release.
   If the burner goes out, repeat procedure holding control knob for slightly longer.
3. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the oven left for at least 1 minute before a further attempt to ignite the burner.
4. Place the oven shelf in the required position and close the door. Set control knob to approximately 200°C and heat the oven for about 30 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the meals being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.
5. Although the oven does heat up quickly, it is recommended that a 10 minute preheat be allowed. The oven should be up to full temperature in about 15-20mins.
6. To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel.
7. Shelf: the shelf has been designed to allow good circulation at the rear of the oven and is also fitted with a raised bar to prevent trays or dishes making contact with the back of the oven. To remove a shelf, pull forward until it stops, raise at front and remove.

Important: The pans and trays supplied with this appliance are the maximum sizes recommended for use. Larger pans and trays may restrict good circulation of heat, increasing cooking times.

Oven Temperature Control

The temperature in the oven is controlled by a thermostatic gas tap and is variable over the range 130°C to 240°C. Approximate temperatures for the settings on the control knob are shown in the table below. The temperatures indicated refer to the centre of the oven and at any particular setting the oven will be hotter at the top and cooler towards the base.

The variation between top and centre, and centre to bottom is approximately equivalent to one gas mark. Good use can be made of the temperature variation in several dishes requiring different temperatures may be cooked at the same time. In this way maximum benefit can be obtained from the gas used to heat the oven. Care should be taken not to overload the oven, adequate spacing being used to allow free circulation for heat.

OPERATION

Cooking Guidelines

Best results will be obtained by the shelf positions in this guide. It is not necessary to preheat the oven but advisable for a range of dishes. The oven is capable of full temperature in 15-20 minutes.

Most cookery books give details of the shelf positions and gas mark settings for each recipe. If in doubt about a recipe you intend to use, study the recipe carefully then find a similar dish in our guide and use our shelf position and gas mark setting recommendation.

Shelf positions are from the top down. When roasting with aluminium foil care must be taken that the foil does not impair circulation or block the oven flue outlet.

Gas Mark	Temperature (Centre - Shelf Pos. 2)	
1/4 - 1/2	265 - 275°F	130-135°C
1	285	140
2	300	150
3	330	165
4	355	180
5	385	195
6	410	210
7	430	220
8	445	230
9	465	240

DO'S AND DON'TS

DO read the user instructions carefully before using the appliance for the first time.

DO allow the oven to heat before using for the first time, in order to expel any smells before the introduction of food.

DO clean the appliance regularly.

DO remove spills as soon as they occur.

DO always use oven gloves when removing food shelves and trays from the oven.

DO check that controls are in the off position when finished.

DO NOT allow children near the cooker when in use. Turn pan handles away from the front so that they cannot be caught accidentally.

DO NOT allow fats or oils to build up in the oven trays or base.

DO NOT use abrasive cleaners or powders that will scratch the surfaces of the appliance.

DO NOT under any circumstances use the oven as a space heater.

DO NOT put heavy objects onto open grill and oven doors.

Leaks

If a smell of gas becomes apparent, the supply should be turned off at the cylinder

IMMEDIATELY. Extinguish naked lights including cigarettes and pipes. Do not operate electrical switches. Open all doors and windows to disperse any gas escape. LPG gas is heavier than air; any escaping gas will therefore collect at a low level. The strong unpleasant smell of gas will enable the general area of the leak to be detected. Check that the gas is not escaping from an unlighted appliance. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray.

MAINTENANCE & SERVICING

IMPORTANT

- Shut off gas supply at isolating valve, switch off electric supply and ensure all parts are cool before cleaning or servicing
- All servicing must be carried out by an approved competent person.
- After each service the appliance must be checked for gas soundness
- This appliance must not be modified or adjusted unless authorized and carried out by the manufacturer or his representative. No parts other than those supplied by the manufacturer should be used on this appliance.
- If the supply cord is damaged, it must only be replaced by the manufacturer or his representative in order to avoid a hazard.

This appliance needs little maintenance other than cleaning. All parts should be cleaned using warm soapy water. Do not use abrasive cleaners, steel wool or cleansing powders.

When cleaning the burner ring it is essential to ensure that the holes do not become blocked. The control knobs are a push fit and can be removed for cleaning. They are interchangeable without affecting the sense of operation.

MICROWAVE OVEN GENERAL USER INSTRUCTIONS

ALWAYS REFER TO THE MICROWAVE OPERATING INSTRUCTIONS SUPPLIED WITH THE VEHICLE

PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

a. Do not attempt to operate this oven with the door open since open door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.

b. Do not place any objects between the oven front face of the door or allow soil or cleaner residue to accumulate on sealing surfaces.

c. **WARNING** if the door or door seals are damaged, the oven must not be operated until it has been repaired by a competent person (1) door broken (2) hinges and latches (broken or loosened), (3) door seals and sealing surfaces.

d. **WARNING** it is hazardous for anyone other than a competent person to carry out a service or repair operation.

e. **WARNING** liquids or other foods must not be heated in sealed containers since they are liable to explode.

f. **WARNING** only allow children to use the oven without supervision when adequate instruction has been given so that the child is able to use the oven in a safe way and understands the hazards of improper use.

g. **WARNING** when the appliance is operated in the combination mode, children should only use the oven under adult supervision due to the temperature generated. (if provided)

IMPORTANT SAFETY GUIDANCE

WARNING: -To prevent fire, burns, electric shock and other warnings:

Listed below are, as with all appliances, certain rules to follow and safeguards to assure high performance from this oven:

IMPORTANT INSTRUCTIONS

1. Do not use the oven for any reason other than food preparation, such as for drying clothes, paper, or any other non food items or for sterilizing purposes.
2. Do not use the oven when empty, this could damage the oven.
3. Do not use the oven cavity for any type of storage, such as papers, cookbook, cookware etc.
4 Do not operate the oven without the glass tray in place. Be sure it is sitting properly on the rotating base.
5. Make sure you remove caps or lids prior to cooking when you cook food sealed in bottles.
6. Do not put foreign material between the oven surface and door. It could result in excessive leakage of microwave energy.
7. Do not use recycled paper products for cooking. They may contain impurities which could cause sparks and/or fires when used during cooking.
8. Do not pop popcorn unless popped in a microwave approved popcorn popper or unless it's commercially packaged and recommended especially for microwave ovens. Microwave popped corn produces a lower yield than conventional popping; there will be a number of unpopped kernels. Do not use oil unless specified by the manufacturer.
9. Do not cook any food surrounded by a membrane, such as egg yolks, potatoes, chicken livers, etc., without first piercing them several times with a fork.

10. Do not pop popcorn longer than the manufacturer's directions. (Popping time is generally below 3minutes). Longer cooking does not yield more popped corn it can cause scorching and fire. Also, the cooking tray can become too hot to handle or may break.
11. If smoke is observed, switch off or unplug the appliance and keep the door closed in order to stifle any flames.
12. When heating food in plastic or paper containers, keep an eye on the oven due lo the possibility of ignition.
13. The contents of feeding bottles and baby food jars shall be stirred or shaken and the temperature checked before consumption, in order to avoid burns.
14. Always test the temperature of food or drink which has been heated in a microwave oven before you give it to somebody, especially to children or elderly people. This is important because things which have been heated in a microwave oven carry on getting hotter even though the microwave oven cooking has stopped.
15. Eggs in their shell and whole hard-boiled eggs should not be heated in microwave ovens since they may explode, even after microwave heating has ended.
16. Keep the waveguide cover clean at all times. Wipe the oven interior with a soft damp cloth after each use. If you leave grease or fat anywhere in the cavity it may overheat, smoke or even catch fire when next using the oven.
17. Never heat oil or fat for deep frying as you cannot control the temperature and doing so may lead to overheating and fire.
18. Liquids, such as water, coffee, or tea are able to be overheated beyond the boiling point without appearing lo be boiling due to surface tension of the liquid. Visible bubbling or boiling when the container is removed from the microwave oven is not always present. THIS COULD RESULT IN VERY HOT LIQUID SUDDENLY BOILING OVER WHEN A SPOON OR OTHER UTENSIL IS INSERTED INTO THE LIQUID.

To reduce the risk of Injury to persons:

a. Do not overheat the liquid.

b. Stir the liquid both before and halfway through heating it.

c. Do not use straight-sided containers with narrow necks.

d. After heating, allow the container to stand in the microwave oven for a short time before removing the container

e. Use extreme care when inserting a spoon or other utensil into the container.

CARE OF THE MICROWAVE

1. Turn the oven off before cleaning
2. Keep the inside of the oven clean. When food spatters or spilled liquids adhere to oven walls, wipe with a damp cloth. Mild detergent may be used if the oven gets very dirty. The use of harsh detergent or abrasives is not recommended.
3. The outside oven surface should be cleaned with soap and water, rinsed and dried with a soft cloth. To prevent damage to the operating parts inside the oven, water should not be allowed to seep into the ventilation openings.
4. If the central panel becomes wet, clean with a soft dry cloth. Do not use harsh detergents or abrasives on Control Panel.
5. If steam accumulates inside or around the outside of the oven door, wipe with a soft cloth. This may occur when the microwave oven is operated under high humidity conditions and in no way indicates malfunction of the unit.
6. It is occasionally necessary to remove the glass tray for cleaning. Wash the tray in warm sudsy water or in a dishwasher.
7. The roller guide and oven cavity floor should be cleaned regular/y to avoid excessive noise. Simply wipe the bottom surface of the oven with mild detergent water or window cleaner and dry. The roller guide may be washed in mild sudsy water.
8. The oven should be cleaned regularly and any food deposits removed;
9. Failure to maintain the oven in a clean condition could lead to deterioration of the surface that could adversely affect the life of the appliance and possibly result in a hazardous situation.

Extractor hood 524

1 Operating panel
2 Light
3 Filter holder with grease filter

The extractor hood 524 serves to extract water vapour from cooking areas in motorhomes. The integrated halogen lamps (2) serve to illuminate the work surface.

The fan and the lighting (2) can be switched independently via the operating panel (1). At the same time. The integrated grease filter (3) prevents the extraction system from being contaminated from inside.

Safety information, always refer to the user instructions provided with your motorhome

Replacing the lamps on the extractor

Lamp type: max. 10W /12V halogen with UVStop

Always switch off the lights before replacing the lamps! The lamps get very hot during operation. There is a risk of being burnt. Wait until the lamp has cooled down.

There is a risk of injury if the lamp is broken.

Remove the remainder of the lamp using suitable tools only.

Replacing or cleaning the grease filter

Flip the front part of the grease filter downwards.

Pull it out towards you.

Remove the filter holder

You can now exchange the filter. Fix the new filter in place with the filter holder. Finally, reinstall the filter unit in the reverse order.

Always switch off the fan motor before replacing the grease filter! There is a risk of injury when reaching inside the running fan.

Replacing the grease filter

To replace the filter, proceed according to figures 8 & 9.

Flip the front part of the grease filter downwards.

Pull it out towards you.

Remove the filter holder

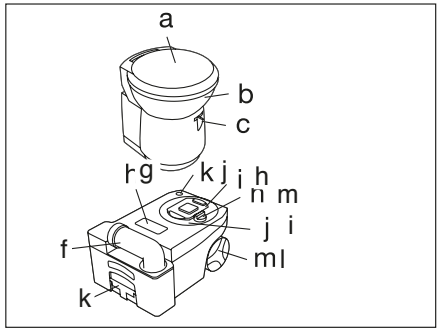
You can now exchange the filter. Fix the new filter in place with the filter holder. Finally, reinstall the filter unit in the reverse order.

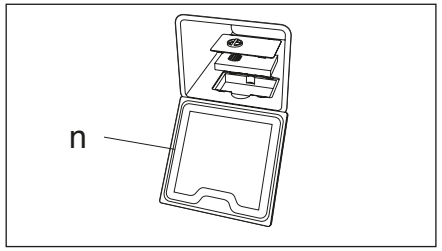
THETFORD C260CS & C260S CASSETTE TOILET

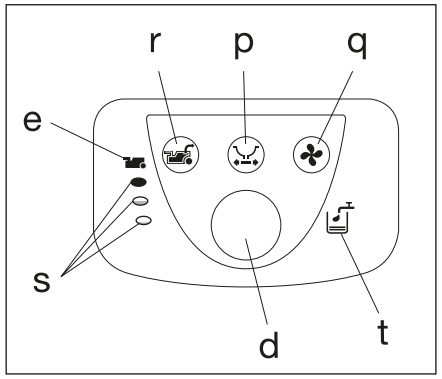
The toilet is made up of two parts: a permanently fixed part and a Waste Holding Tank that is accessible from the outside. The removable Waste Holding Tank is located under the toilet bowl and can be removed via a door on the outside of the motorhome.

PARTS

a) Removable Seat and Lid
b) Swivelling Toilet Bowl
c) Blade Handle
d) Flush Button
e) Waste Holding Tank Level Indicator
f) Rotating Emptying Spout
g) Automatic Pressure Release Vent
h) Sliding Cover
i) Removable Mechanism
j) Vent Plunger
k) Pull-Out Handle
l) Wheels
m) Blade Opener
n) Access Door to Waste Holding Tank
P) Electric blade opener
Q) Electric ventilator
R) Waste pump-out system
S) Waste holding tank mult-level indicator
T) Flush water tank level indicator







Control panel

Preparing for use

1. Open the access door on the outside of your motorhome.
2. Remove the Waste Holding Tank by pulling the safety catch (which holds the tank in place) upwards.
3. Pull the Waste Holding Tank outward to the stop. Tip it slightly and take the tank fully out.
4. Place the tank upright and turn the rotating emptying spout upwards. The emptying spout ensures that the tank can be easily and hygienically emptied.
5. Remove the cap, with the measuring cup inside, from the emptying spout and pour the correct dosage of Thetford toilet fluid (see product label) into the holding tank. This avoids unpleasant smells and keeps the inside of the tank clean. Next add approximately 2 litres of water - enough to ensure that the bottom of the Waste Holding Tank is covered. For more information on Thetford toilet fluids, see last page of the Thetford user manual. Screw the cap back onto the emptying spout and turn back to its original position.

Note. The Emptying Spout Measuring Cap is supplied in the same packaging as the Thetford user manual.

WARNING! Never add toilet fluid directly via the blade or the toilet bowl as this could damage the lip seal of the Waste Holding Tank. Always pour the fluids via the emptying spout.

6. Slide the Waste Holding Tank back into its original position via the access door. Make sure that it is secured with the safety catch. Close the access door and lock it. Your Thetford toilet is now ready to use.

WARNING! Never use force if you cannot get the tank back into place easily. This may cause serious damage. If blockage occurs, always check if the blade handle is in the correct (closed) position.

Using the toilet

7. Turn the bowl to the desired position with the lid closed and using both hands.
8. To activate the control panel, press the flush-button once. The control panel display will stay activated for approximately 5 minutes. Run some water into the bowl by pressing the flush button again briefly.
9. The toilet may be used with the blade open or closed. To open the blade, slide the blade handle under the toilet bowl sideways. After use, open the blade (if still closed) and flush the toilet by pressing the flush button for several seconds (if necessary re-activate the control panel). Close the blade after use.

Emptying

The Waste Holding Tank has a capacity of 18 litres and requires emptying when the red light (LED) on the toilet control display lights up, when the Waste Holding Tank only has capacity for approximately 2 more litres, which is no more than two to three further uses.

Make sure that the blade is closed. Open the access door located outside the vehicle, pull the safety catch upwards and remove the Waste Holding Tank.

10. Place the Waste Holding Tank in an upright position (Pull-Out Handle at the top, Wheels at the bottom). Slide the handle sideways - to the front of the tank - until it snaps out of its locked position.
11. Pull the handle up and wheel the Waste Holding Tank to an authorised waste disposal point.
12. Push the handle back into its locked position. Turn the emptying spout upwards and remove the cap from the spout. Hold the Waste Holding Tank in such a way that during emptying you can operate the vent plunger with your thumb. To empty the tank without splashing, depress the vent plunger while emptying the tank. After emptying, rinse the tank and blade thoroughly with water.

WARNING! Do not seriously shake the tank or use high pressure water cleaners. This may cause damage to the tank's interior.

Note. The vent plunger should only be depressed once the emptying spout is pointing downwards. Prepare the toilet for re-use if required. Slide the Waste Holding Tank into the toilet and close the access door.

Cleaning and maintenance

The toilet should be cleaned and maintained regularly, depending on the amount of use. To clean Thetford toilets, we advise using water and Thetford Bathroom Cleaner.

Note. Never use bleach, vinegar or other powerful household cleaners that contain these substances. These may cause permanent damage to the seals and other toilet components.

Toilet bowl

- Squirt Thetford Bathroom Cleaner into the toilet bowl.
- Flush the toilet bowl with water and wipe down the rest of the toilet with a damp cloth.
- Clean seat and lid The seat and lid can easily be removed: Lift the seat and lid assembly and pull the round pins (inside the assembly) outwards from the pin holes. After cleaning, replace the seat and lid by positioning the round pins in front of the pin holes and push the lid and seat downwards.
- To keep your flush water fresh and to prevent deposits from forming in your toilet bowl, add a correct dosage of Aqua Rinse in your flush water tank, if present, on your toilet.

Tip! For a really shining toilet, dry with a soft dry cloth after cleaning.

Waste holding tank

To keep your Waste Holding Tank fresh and clean, Thetford has developed a number of different toilet fluids. Thetford toilet fluids suppress smells, reduce formation of gas, promote breakdown of toilet waste and increase the life span of a mobile toilet. See page 50 of the Thetford user manual for more information. We advise a thorough cleaning of the Waste Holding Tank once each season, using Thetford's Cassette Tank Cleaner.

- Remove the removable mechanism from the Waste Holding Tank by turning it anti-clockwise and rinse it under a tap.
- Remove the cover plate from the Automatic Pressure Release Vent by prising it up using a small screwdriver. Use one hand to push the Automatic Pressure Release Vent open while holding the float of the Automatic Pressure Release Vent on the inside of the tank with the other hand. Push the float upwards, turn it 180 degrees and remove it from below. Remove the rubber seal underneath the float. Rinse the float and rubber seal under a tap. Replace the Pressure Release Vent using the same method in reverse.

The rubber seals in the toilet (the lip seal, the mechanism seal, the automatic pressure release vent seal and the cap seal) should be regularly cleaned with water and treated with Thetford High Grade Seal Lubricant. This will ensure that the seals remain flexible and in good condition. If the toilet is not to be used for any length of time, it is important to treat the seals with Thetford High Grade Seal Lubricant after cleaning.

Note. Never use Vaseline or any vegetable oil except olive oil. These may cause leakage or malfunction. The lip seal is a part of the toilet that is subject to wear. Depending upon the extent and manner of use, the seals will become less effective and will need replacing periodically.

Winter operation

You can use your Thetford Cassette Toilet as normal in cold weather as long as the toilet is situated in a heated location. If there is a risk of freezing we advise that the toilet is drained by following the instructions under 'Storage'. For environmental reasons the use of antifreeze, such as that used in car radiators, is not recommended.

Storage

It is important that you follow the instructions below if you do not expect to use your Thetford toilet for a long (winter) period.

- With the vehicle fresh water tank drained, (See "Fresh Water System" on page 153 for how to drain the tank), press the toilet flush button until water stops flowing into the bowl. Close the blade. Open the access door on the outside of your motorhome and empty the Waste Holding Tank at an authorised waste dump. Follow the instructions for cleaning and maintenance. To allow the Waste Holding Tank to dry, do not place the cap back on the emptying spout of the tank.

Thetford warranty refer to the Thetford user handbook.

CASSETTE TOILET FAULT FINDING

Fault	Remedy
Bowl does not drain when toilet is flushed. Cassette is overfilled	DO NOT REMOVE CASSETTE. While inside the motorhome turn flush knob anti-clockwise to open valve blade and leave it in the open position. Open access door on side of motorhome. Rotate pour-out spout outward. Place appropriate size container under spout cap. Remove cap carefully. Allow bowl contents to drain into container. This will lower the water level in the bowl. Replace cap and return pour-out spout to stored position. DO NOT REMOVE CASSETTE. Go inside the motorhome and turn the flush knob clockwise to close valve blade. Now, the cassette may be removed following the normal removal and emptying procedure.
Odours	Use proper amount of holding tank deodorant specified on bottle.
Soiled bowl after flushing	Partially fill bowl to cover soiled portion of bowl. Next flush will dissolve waste. Tip: Leave valve blade open during use.
No power to add water to toilet bowl	Check cassette safety sensor switch and fuse-holder for proper engagement and operation. Note: Cassette has to be removed to reach switch and fuse. Insert cassette and try adding water to toilet bowl. Toilet can be flushed manually. Add water. Add water to bowl from a separate container. Turn flush knob anti-clockwise to open valve blade. Turn clockwise to close valve blade.
Cassette cannot be removed	Check for obstacles under retaining clip. Depress retaining clip several times to check operation. Remove cassette. Flush knob and valve blade in partial open position. Close valve blade by moving knob clockwise. **CAUTION: If valve blade is open during cassette removal, severe damage to system can occur. Never force insertion or removal of the cassette tank.**
Valve blade mechanism sticks or is hard to open	Spray light film of silicone on blade.
Major unit malfunction	Contact your original Motorhome Dealer.

THRETFORD C400 CASSETTE TOILET

These operating instructions cover Thretford cassette toilet models C-402C, C-402X and C-403L. There are a few differences in the use of these models. Make sure that you follow the instructions that apply to your toilet model.

The parts and functions that are referred to by letters are illustrated in later pages.

The actions to be taken, referred to by numbers, are illustrated are also illustrated in pages 161-162.

PARTS AND FUNCTIONS

C-402C and C-402X

a. Handle: opens and shuts the valve blade
b. Flush knob: when this pressed, an electric pump fills the bowl with water
c. Level indicator display: the red LED on the display lights up when the waste tank is full (C-402C and C-402X). When the flush know is pressed briefly, the display shows the level in the waste tank and the level in the water tank (C-402X).
d. Removable seat and cover
e. Cover plates
f. Storage compartment for toilet fluids (only the tall model)
g. Safety catch: holds the waste tank in place
h. Water filling tunnel: for easy filling of the water tank.
i. Cover: guarantees optimal hygiene. Opens when the waste tank is located in the toilet and closes when the waste tank is removed.
j. Removable mechanism
k. Valve blade opener
l. Valve blade / valve seal
m. Vent plunger: for emptying with splashing.
n: Upper handle
o. Automatic pressure release valve: ventilates the waste tank when this located in the cassette toilet. Avoids excessive pressure in the waste tank.
p. Pull-out handle: for easy transport of the waste tank.
q. Wheels
r. Rotating emptying spout: ensures that the waste tank can be easily and hygienically emptied.
s. Water filling extension
t. Access hatch to waste tank and water filling funnel: lockable from the outside of the vehicle.

C-402L

a. Handle: opens and shuts the valve blade.
b Flush knob: when pressed a central electric pump in the vehicle pumps water into the bowl.
c. Level indicator display: the red LED on the display lights up when the waste tank is full. When the flush knob is pressed briefly, the display shows the level in the waste tank.
d. Removable seat and cover
e. Cover plate
f. Storage compartment for toilet fluids (only the tall models)
g. Safety catch: holds the waste tank in place.
h. Cover: guarantees optimal hygiene. Opens when the waste tank is located in the toilet.
i. Removable mechanism
j. Valve blade opener
k. Valve blade / Valve seal
l. Vent plunger: for emptying without splashing.
m. Automatic pressure release vent: ventilates the waste tank when this is located in the cassette toilet. Avoids excessive pressure in the waste tank.
n. Upper handle: for easy emptying
o. Pull-out handle: for easy transport of the eate tank.
p. Wheels
q. Rotating emptying spout: ensures that the waste tank can be easily and hygienically emptied.
r. Access hatch to waste tank: lockable from the outside of the vehicle.

Introduction

The Thretford cassette toilet is a high quality product. The functional design combines modern styling and ease of use and the toilet forms an integrated part of your caravan or camper bathroom. The Cassette toilet is manufactured from high quality synthetic material This makes it a durable, user and maintenance friendly toilet.

The toilet is made up of two parts, a permanently fixed part and a waste tank that is accessible from the outside. The removable waste tank is located, under the toilet bowl and can be removed via a door on the outside of the caravan or camper.

PREPARING FOR USE

C-402C, C-402X and C-403L

1. Open the access door on the outside of your caravan or camper.

C-402C and C-402X

2. Rotate the waste tank emptying spout 90 degrees and remove the water filling extension (you will find it positioned beneath the handle closest to the emptying spout).
3. Rotate the waterfill funnel outwards, remove the cap and place the extension on the waterfill funnel. Add the stated amount of Thretford fresh water additive to the water tank. This ensures a better and cleaner flush and keeps the water in the flush tank fresh.
4. Fill the water tank with clean water. Warning: keep water level below the top of the water filling funnel.
5. Remove the extension and return to its original position on the waste tank.

Note: depending on the space between the door and wate tank, this extension part may also be fixed on the door with a hook. Screw the cap back onto the water filling funnel and push back inwards towards the side of the flush water tank.

Note: 150ml of water will remain in the waterfill funnel when the water tank is empty.

C-402C, C-402X and C-403L

6. Remove the waste tank by pulling the safety catch upwards.
7. Pull the waste tank outward to the stop. Tip it slightly and take the tank fully out.
8. Place the tank upright and turn the emptying spout upwards.
9. Remove the cap, with the measuring cup inside, from the emptying spout and pour the stated quantity of toilet fluid into the waste tank. This avoids unpleasant smells in the waste tank and keeps the inside of the waste tank clean. Next add approximately 2 litres of water - enough to ensure that the bottom of the waste tank is covered. Screw the cap back onto the emptying spout. Turn the emptying spout back to its original position. **N.B.** The emptying spout measuring cap is supplied in the same packaging as this manual.

WARNING! Never add toilet fluid via the valve blade or via the toilet bowl.

10. Slide the waste tank back into its original position via the access door.

WARNING! Never use force if you cannot get the tank back into place easily. This may cause serious damage.

11. Made sure that the wate tank is secured with the safety catch. Shut the access

door and lock it.

Use C-402C, C-402X and C-403L

12. Run water into the bowl by pressing the flush knob briefly or open the valve blade by turning the handle anti-clockwise. Your Thretford toilet is now ready for use.
13. After us, open the valve blade (if still closed) by turning the handle anti-clockwise. Flush the toilet by pressing the flush knob for several seconds. Close the valve blade after use.

NOTE: Do not leave water in the bowl if toilet is not being used. This does not help to reduce unpleasant smells and only leads to flooding.

NOTE: To prevent clogging, we recommend using Aqua soft, Thretford's quickly dissolving toilet paper.

WARNING! Please do not travel with a flush water tank that is too full (we advise empty, but for sure not filled more than half full. Do not travel with water in the toilet bowl. Failure to adhere to this notice may result in water damage to your caravan or motorhome.

EMPTYING

The waste tank has a capacity of 19 litres and must be emptied at the latest when the red light in the level display lights up. The indicator lamp will light up when the waste tank can still take about two litres, which is about three uses.

NOTE: Do not allow the waste tank to become too full.

Use C-402C, C-402X and C-403L

14. Make sure that the valve blade is closed. Open the access door located outside the vehicle. Pull the safety catch upwards and remove the waste tank.
15. Remove the water filling extension first to avoid it getting lost during the emptying of the waste tank.
16. Stand the waste tank upright (pull out handle at the top, wheels at the bottom). Press the handle down and move it away from the waste tank until it snaps out of its locked position.
17. Pull the handle up and wheel the waste tank to an authorised waste dump.
17. Pull the handle up and wheel the waste tank to an authorised waste dump.
18. Push the handle back. Turn the emptying spout upwards and remove the cap from the spout. Hold the waste tank by the upper handle with one hand, while placing your other hand by the rear handle so that during emptying you can operate the vent plunger with your thumb. To empty the tank without splashing, depress the vent plunger while emptying the tank. After emptying, flush the tank thoroughly with water. Also clean the valve blade with water.

NOTE: The vent plunger should only be pressed once the emptying spout is pointing downwards!

19. If required make the toilet ready for use once again. Return the water filing extension to its original position on the waste tank. Slide the waste tank into the toilet and close the access door.

STORAGE

It is important that you follow the instructions below if you do not expect the Thretford toilet for a long period.

Completely empty the water tank through the drain tube, which also serves as a level indicator. Take the drain tube out of the clamp and carefully pull it downwards from the upper plug. Direct the drain tube out through the access door opening to allow water to flow out. Afterwards, be sure the drain tub is placed back into the clamp first and then pushed into the upper plug.

C-403L

Drain the central water system of the caravan or camper.

C-402C, C-402X and C-403L

20. Open the valve blade by turning the handle on the toilet anti-clockwise. Press the blue knob until water stops flowing into the bowl. Close the valve blade.

C-402C and C-402X

21. Open the access door on the outside of your caravan or camper and turn the water filling funnel outwards. Remove the cap and empty the water filling funnel by turning it a quarter turn anti-clockwise.

C-402C, C-402X and C-403L

22. Remove the waste tank and empty this at an authorise waste dump. Follow the instructions for cleaning and maintenance.
23. Replace the waste tank and open the valve blade by moving the handle on the toilet to the left.

Cleaning and maintenance

The toilet should be cleaned and maintained regularly, depending on the amount of use. To clean Thretford toilets, we advise using water and Thretford Plastic Cleaner.

NOTE: Never use household cleaners (bleach, solvents or other powerful cleaning agents). These may cause permanent damage to the seals and other toilet components.

Toilet

- Squirt Thretford Plastic Cleaner in the toilet.
- Flush the bowl with water and wipe down the rest of the toilet with a damp cloth.

Tip! For a really shining toilet, dry it with a soft dry cloth after cleaning.

- Clean seat and lid. The seat and lid can easily be removed. Lift the lid and seat together and pull upwards. After cleaning, replace the seat and lid by positioning the round pins above the holes and then pushing the lid and seat downwards.

Waste tank

We advise a thorough cleaning of the waste tank once each season.

- Remove the mechanism from the waste tank by turning it anti-clockwise, as shown on the waste tank. Rinse the complete mechanism under a tap.
- Remove the cover plate from the automatic pressure release vent by prising it up using a screwdriver. Use one hand to push the automatic pressure vent open, while holding the float of the automatic pressure release vent on the inside of the tank with the other hand. Push the float upwards, turn the float half a turn and remove it from below. Remove the rubber seal that is under the float. Rinse the float and the rubber seal under a tap. Replace the rubber seal and float for the automatic pressure release vent in the same way.

The rubber seals in the toilet(the valve blade seal, the mechanism, seal and the automatic pressure release vent seal and the cap seal) should be regularly treated with Thretford High Grade Seal Lubricant. This will ensure that the seals remain supple and in good condition.
If the toilet is not to be used for any length of time, it is important to treat the seals with

Thretford High Grade Seal Lubricant after cleaning.

NOTE: Never use Vaseline or any vegetable oil except olive oil. These may cause leakage.

NOTE: The valve blade is part of the toilet that is subject to wear. Depending on the extent and manner of service, after a certain period the seal will become less effective and must be replaced.

Winter operation

You can use you Thretford cassette toilet as usual in cold weather, as long as the toilet is situated in a heated location. If this is not the case there is a risk of freezing. In that case we advise that the toilet is drained by following the instructions under 'Storage'.

For environmental reasons the use of antifreeze, such as that used in a car radiator, is not advised.

Thretford Warranty

Thretford B.V. offers the end users of its products a three year gurantee. In the case of defects within the guarantee period Thretford will replace or repair the product. In this instance, the costs of replacement, labour costs for the replacement of defective components and/or the costs of the parts themselves will be paid by Thretford.

1. To claim under this guarantee, the user must take the product to a Service Centre recognised by Thretford. The claim will be assessed there.
2. Components replaced during repair under guarantee become the property of Thretford.
3. This guarantee does not prejudice current consumer protection law.
4. This guarantee is not valid in the case of products that are for, or are used for, commercial purposes.
5. Guarantee claims falling into one of the following categories will be honoured:

- the product has been improperly used or the instructions in the manual have not been followed;
- the product has not been installed in accordance with the instructions;
- alterations have been made to the product;
- the product has been repaired by a Service Centre not recognised by Thretford;
- the serial number or product code has been changed;
- the product has been damaged by circumstances outside the normal use of the product.

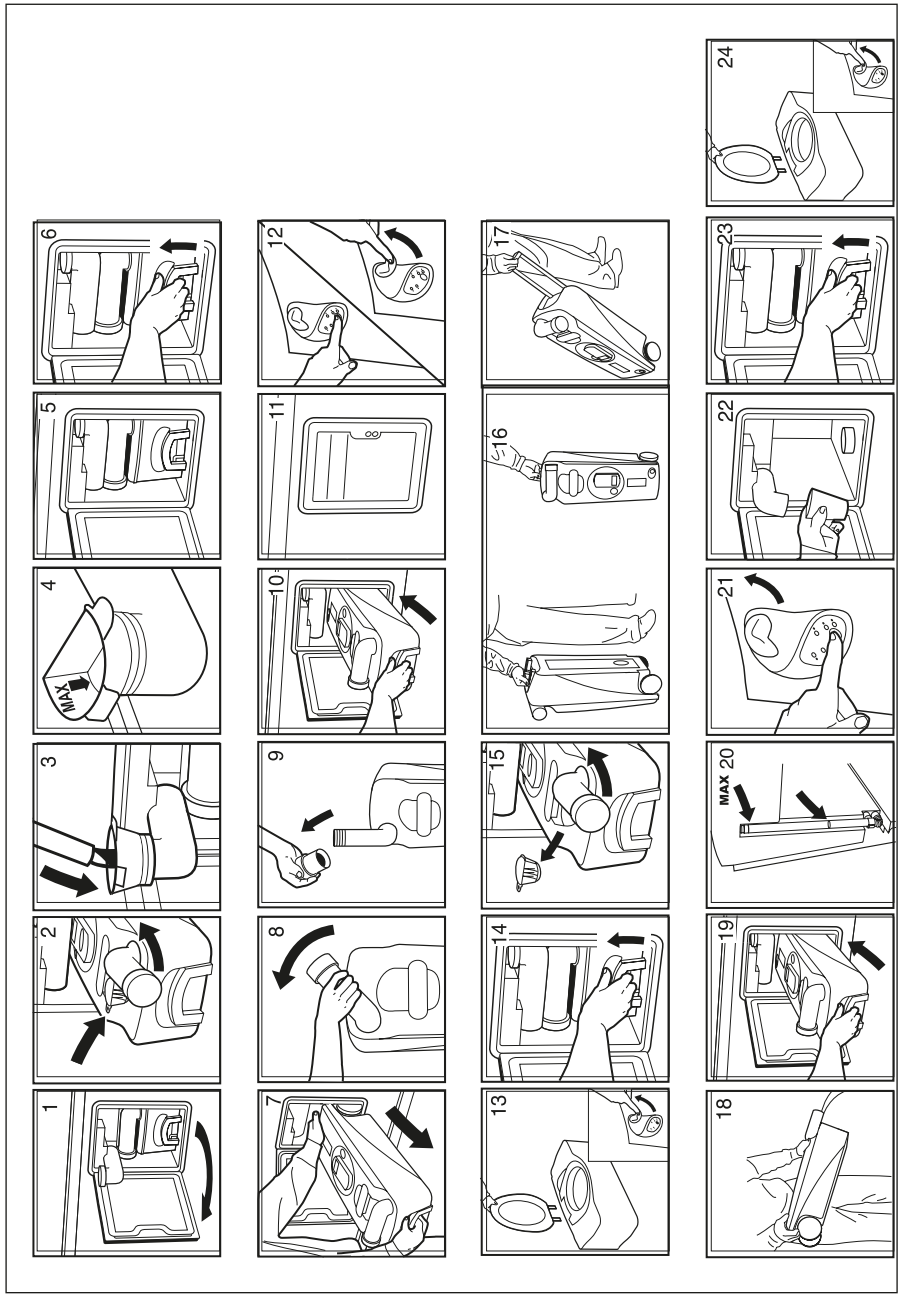
Customer service

Please visit our web site if you require further information or have questions about your toilet, www.thretford.eu The information available includes frequently asked questions, problems and solution, instructions for repair, tips and a list of Thretford dealers near you. If you still have questions or remarks, please contact the Customer Service Department in your country (see the addresses at the back of this manual).

Liabilty

Thretford is not liable for loss and/or damage caused directly or indirectly by use of the toilet.

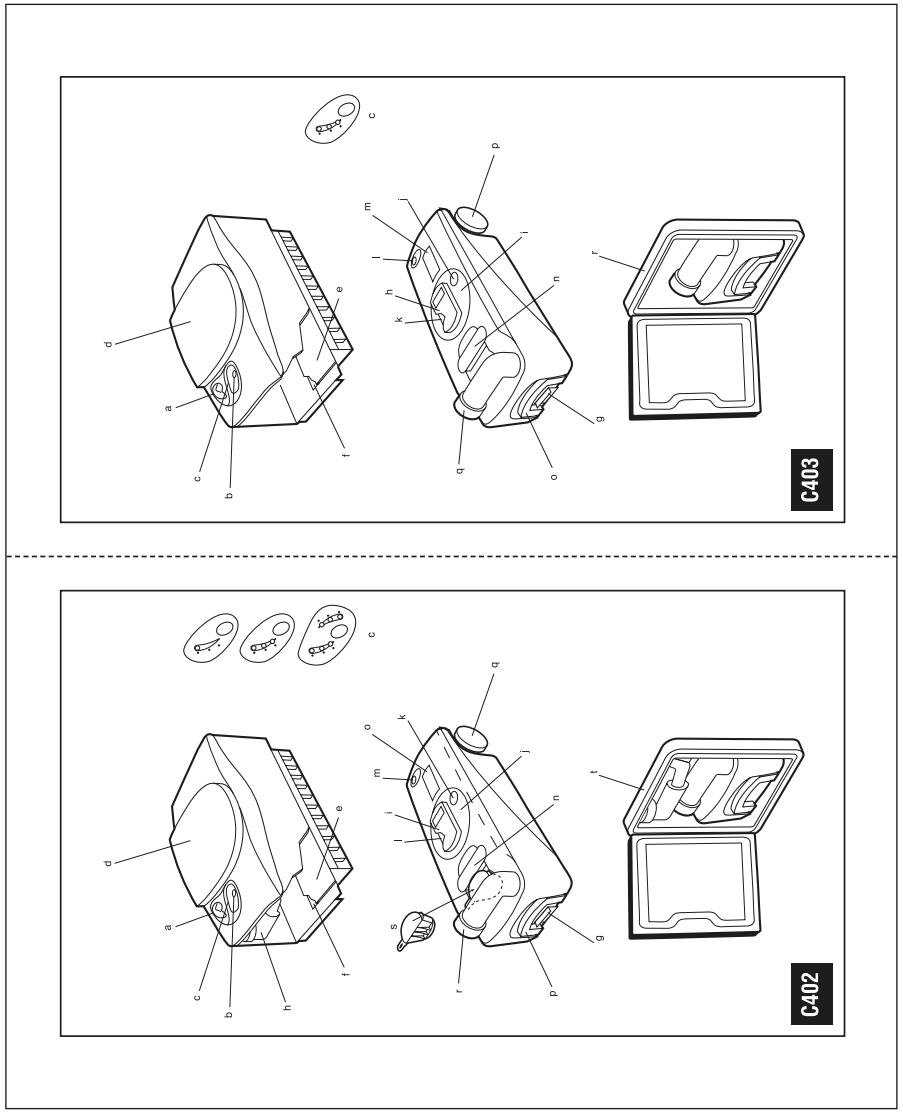
Flush water tank contents	Waste tank contents
15 L	19.3 L



C-402C, C-402X and C-403L models

PARTS AND FUNCTIONS

C-402C, C-402X and C-403L



CASSETTE TOILET FAULT FINDING

Fault	Remedy
Bowl does not drain when toilet is flushed. Cassette is overfilled	DO NOT REMOVE CASSETTE. While inside the motorhome turn flush knob anti-clockwise to open valve blade and leave it in the open position. Open access door on side of motorhome. Rotate pour-out spout outward. Place appropriate size container under spout cap. Remove cap carefully. Allow bowl contents to drain into container. This will lower the water level in the bowl. Replace cap and return pour-out spout to stored position. DO NOT REMOVE CASSETTE. Go inside the motorhome and turn the flush knob clockwise to close valve blade. Now, the cassette may be removed following the normal removal and emptying procedure.
Odours	Use proper amount of holding tank deodorant specified on bottle.
Toilet tissue does not fit into compartment.	Since some tissues are supplied on larger rolls, it may be necessary to use some tissue before storing into compartment.
Soiled bowl after flushing	Partially fill bowl to cover soiled portion of bowl. Next flush will dissolve waste. Tip: Leave valve blade open during use.
No power to add water to toilet bowl	Check cassette safety sensor switch and fuse-holder for proper engagement and operation. Note: Cassette has to be removed to reach switch and fuse. Insert cassette and try adding water to toilet bowl. Toilet can be flushed manually. Add water. Add water to bowl from a separate container. Turn flush knob anti-clockwise to open valve blade. Turn clockwise to close valve blade.
Cassette cannot be removed	Check for obstacles under retaining clip. Depress retaining clip several times to check operation. Remove cassette. Flush knob and valve blade in partial open position. Close valve blade by moving knob clockwise. **CAUTION: If valve blade is open during cassette removal, severe damage to system can occur. Never force insertion or removal of the cassette tank.**
Valve blade mechanism sticks or is hard to open	Spray light film of silicone on blade.
Major unit malfunction	Contact your original Motorhome Dealer.

WINDOWS

To open, turn knobs anti-clockwise and open catches. Swivel the window pane open to the desired position and close knobs clockwise to lock in the open position.

To close, reverse the operation.

All opening windows have two catch positions. The first position is for ventilation the second seals the window from ventilation and rain.

Acrylic (Plastic) Window Condensation

Unlike domestic double glazed windows, your caravan / Motorhomes window are not vacuum sealed instead the double panes of acrylic plastic with are fitted with a breathable plug on the inner pane.

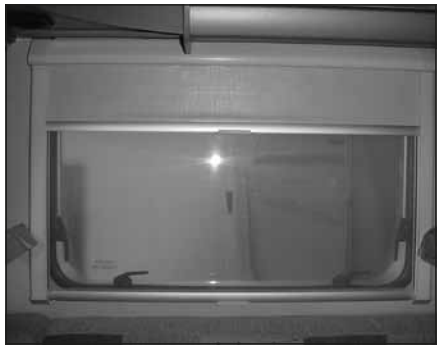
It is possible, in weather where extremes in temperatures occur between night and day, that customer will notice condensation between the panes. The same phenomenon may also occur when washing your vehicle on a hot day.

The condensation should clear itself when the ambient conditions return to normal and the air between the panes dries. However, if this is taking a longer time than required, the breathable plug (normally located in the top corner of the window) can be removed, with a pin or sharp object, and replaced when the panes are dry. Care should be taken when doing this.

Acrylic (Plastic) Window Cleaning

The material used to produce most caravan and Motorhome windows is acrylic plastic. While the acrylic used is very durable, it is able to be scratched with relative ease and therefore, care must be taken when clearing your vehicle not to use aggressive clearing products. Equally, care should be taken when using a drying cloth that it is clean and free from grit.

S2000 BLINDS (SEITZ)



Blinds and Flyscreens

Flyscreen and blinds operate in the same manner. The flyscreen can only be 'fully up' or 'fully' down, but the blind also has an intermediate position.

To operate, pull down by holding the fingergrip(s), gently ease towards the window to locate the catches. To retract, pull down easing away from the window to release the catches and guide to the required position.

- Only operate by holding the fingergrip(s) - pulling on one side will cause uneven running and snagging.
- Do not allow the blind or flyscreen to re-coil without control.
- It is not recommended that blinds and/ or flyscreens are left in the down position for long periods, or when travelling, as this can result in fatigue of the spring.
- Clean the cassette, side track and fabrics with mild detergent and water.
- Lubrication of mechanism or spring is not required or recommended.

For more detailed information, see manufacturer's instructions.

Cassette Blind and Flyscreen
Always hold the end rod in the middle. When closing blinds, slide the end rod of the flyscreen blind on to the end rod of the sun blind and engage. To open the blind push the end rods towards the darkening blind to the edge and disengage the end rods. Now move the end rod of the flyscreen back by hand - do not let it recoil.

Tensioning Seitz blinds and flyscreens
Seitz S2000 window blinds/flyscreens are pre-tensioned, it may also be necessary in the future to adjust the tension of these. Remove the left hand top corner cap. Adjust the lower screw for the blind and the higher screw for the flyscreen. Care should be taken not to over tighten the springs.

The spring in the Seitz cassette window blinds/ flyscreens are pre-tensioned. However, it may be necessary in the future to adjust the tension. The tensioning screw is positioned on the right hand top corner of the cassette. Firstly remove the plug then adjust by rotating the screw clockwise. Then replace plug.

The blinds should rewind without stopping or moving in a sluggish manner.

WINDOWS/ ROLLER BLIND ADVICE

In case of prolonged exposure to the sun roller blinds should not be completely closed as this could cause excessive heat concentration at the top of the window, due to characteristics of the glazing material the windows could be adversely affected.

Roller blinds that shade from the bottom upwards it is necessary to leave a gap of a few centimetres open at the top, this way the heat between window and blind can escape. A fly screen does not cause an obstruction.

Roller blinds that shade from the top downwards must be kept completely open, or be opened regularly to allow the heat to escape.

Keeping the windows in ventilation position allows heat to escape.

Never fully close a roller blind system when storing the vehicle or when not in use for longer periods!

Therefore for optimal window life it is recommended:-

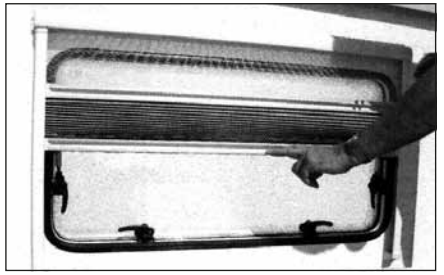
- Blinds starting at the bottom of the window a gap should be provided for ventilation at the top with the window in its ventilation position.
- For vehicles containing blinds from the top downwards or with other types of reflective blinds / curtains, please make sure that these blinds are also ventilated or not fully closed.

Ensure that all windows and roof vents are closed when the vehicle travels on the road.

To adjust the tension of the Horrex blind:

In each corner piece there is an cord tensioner (see photo). By unscrewing the hexagon screw, the cord can move through the cord tensioner. When you pull the cord, the tension will get higher, when you let it move back the tension will get less.

OPERATING INSTRUCTIONS FOR BLINDS (SOFTROLLO)



Closing: Grab the end bar in the middle and push the blind and flynet together or singly (blind - lower end bar) downwards until the required position is reached.

Opening: Push the end bar of the flynet and / or of the blind upwards.

Care instructions: Clean the blind only with a damp sponge. Clean on a regular basis to avoid dirt particle build up as this can damage the blind material. Use only water or with mild suds or a vacuum cleaner.

In order to avoid material fatigue, do not leave the flynet closed for a long time.

SKYVIEW OPERATING INSTRUCTIONS

Safety and care instructions

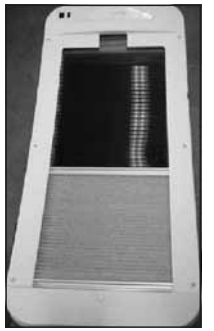
Before opening the dome please check if all handles are disengaged and no objects are in the opening area of the rooflight.

To open, turn the handle anti-clockwise to the required opening position.

To close, turn the handle clockwise until the dome lies on the seal and a resistance is noticeable.

Before you start your journey, close the rooflight by turning the handle to the closed position

Please make sure that no persons or objects are in the closing area of the rooflight.



Opening/closing the blind and fly net
Pull the end rod from the recessed part and push it in a position you desire. You can adjust the incidence of light with the second operating bar.

Safety precautions
Repairs should be carried out only by trained personnel. Inform an approved dealer in case of defects and malfunctions.

Before starting off, check the roof light for damage in the dome (tension cracks) and the opening mechanism which could arise owing to, for example, branches and other natural causes. Do not step on the screen.

Do not leave the vehicle with the roof light open (danger of burglary and water penetration).

Do not open in strong wind, rain or snowfall. Before opening, remove snow, ice, dirt etc. from the dome.

Malfunctions must be repaired by an approved dealer at once. Do not use caustic detergents (danger of tension cracks in the dome).

Before setting off close the dome and check the locking mechanism.

Avoid high speed (maximum speed recommended is 130 km/h). Do not close the blind more than 2/3 during the day (danger of heat build up). Before starting off, Open the blind.

Care instructions

Clean the dome with the Seitz acrylic cleaner.

Opaque spots and light scratches on the dome can be removed with the Seitz Acrylic Polish and the Seitz Special Polishing cloth.

Use talcum powder regulary (4 times yearly) to care for the rubber seals.

Clean the blinds only with water and mild soap suds or a vacuum cleaner.

The guarantee becomes null and void if the care and safety instructions are not followed.

ROOF LIGHTS

When opening the roof lights, care must be taken to release the locking mechanism as the unit is raised.

Roof lights must be fully closed when driving. Roof lights provide essential fixed levels of ventilation.

Mini Heki Rooflight
To open depress button and push bar upwards. The rooflight has two open ventilation positions and a fully open position.

The blind and flynet operate independently of each other and are engaged by connecting to each other and sliding.

Heki care instructions: Clean the blind only with a damp sponge. Clean on a regular basis to avoid dust/ dirt particle build up as this can damage the blind material. Use only water or with mild suds or a vacuum cleaner.

In order to avoid material fatigue, do not leave the flynet closed for a long time.

ROOF LIGHT BLIND AND FLYSCREEN

The blind and flyscreen operate Independently of each other and are engaged by connecting to each other and sliding.

Safety precautions:

1. Repairs should be carried out only by trained personnel.
2. Inform an approved dealer in case of defects and malfunctions.
3. Before starting off, check the rooflight for damage in the acrylic dome (tension cracks) and the winding mechanism which could arise owing to, for example, branches and other natural causes.
4. Do not step in the acrylic dome.
5. Close the roof light before starting off (check whether it is locked).
6. Do not leave the vehicle with the rooflight open (danger of burglary or from rain).
7. Do not open in strong wind or rain.
8. Before opening, remove snow, ice, dirt, etc. from the acrylic dome.
9. Malfunctions are to be repaired by an approved dealer at once.
10. Do not use caustic detergents (danger of tension cracks in the acrylic dome).
11. Do not operate whilst the vehicle is moving.

Midi Heki Roof-light

With operating bar: To open, depress button and push bar to required position. The rooflight has two open ventilation positions and a fully open position.

To close, reverse the operation and then check if locked into position.

With crank: To open, rotate the crank until a resistance is noticeable during the operation.

To close, reverse the operation and then check if locked into position.

Electric version: To open, push button until desired position is reached or the electric motor switches off.

To close, reverse the operation and then check if locked into position.

Care instructions:

- Please clean the acrylic panes with the Seitz Acrylic Cleaner.
- Stains and light scratches on the acrylic pane can be removed by using the Seitz Acrylic Polish and the Seitz special polishing cloth.
- Use talcum powder (4 times yearly) to care for the rubber seals
- Clean the blinds only with water and mild soap suds
- The guarantee becomes null and void if these instructions are not followed.

DOORS

In order to provide customers with the latest designs of door furniture it is possible, due to the use of natural wood, that warping may occur. This should not detract from the correct functioning of items fitted in the motorhome.

Information

During the normal travelling vehicle vibration and flexing may cause some of the furniture doors to become out of alignment.

For your convenience many hinges are adjustable.

OMNISTEP SINGLE STEP

Operation

The OMNISTEP is operated by the lever switch.

Important: when extending the step, hold the switch until the step is completely extended. Never mount the step if retracted of if not fully extended, because then the blocking is not working and the motor can be damaged.

Check if the step is retracted before departure.

Maintenance

Dirt and frost can prevent the step from operating properly. In this case the moving parts should be cleaned or defrosted.

All points of movement are layered in maintenance-free bearings.

In case of electrical failure

If the step does not retract by motor: Loosen the square connection according to fig. 5 (actions 1, 2 and 3), push the footboard in (4) and tie it to the frame.

Current drawn

5 A. When fully extended or retracted: 14-18 A

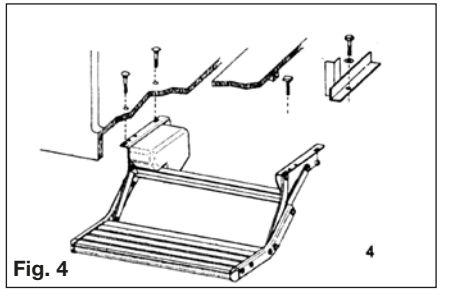


Fig. 4

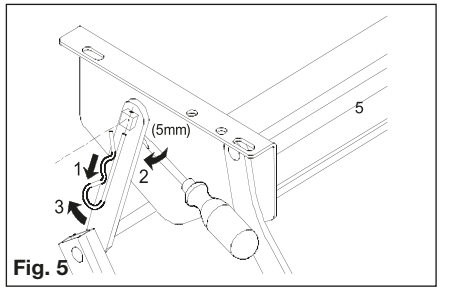
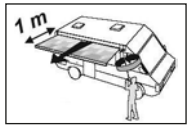


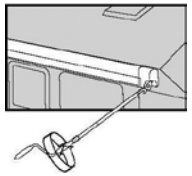
Fig. 5

FITTED EQUIPMENT

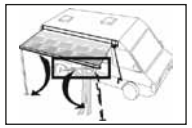
FIAMMA F45S SIDE AWNING



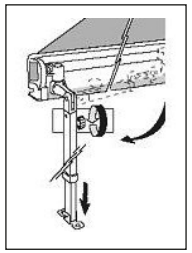
In order to avoid unnecessary strain on the awning as well as on the vehicle side, we suggest that the legs be extended about 1m from the opening.



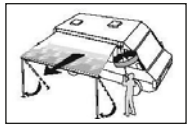
Unscrew the leg knob to slide the leg out of its seat.



Grasp the leg near its hingejoint and pull it in a horizontal direction.

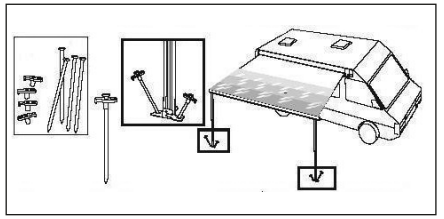


Lower the leg as shown in the figure.



After unrolling the awning completely, adjust the legs at the chosen height.

To avoid that the awning is lifted up by an unexpected gust of wind, it is necessary to secure the legs to the ground with the provided hooks. For greater safety, we strongly advise you also use some storm cords in the upper part of each support leg or anchor the awning with the Fiamma Tie-Down Kit strap.



If you want to fasten the support legs to the vehicle, put the terminals into the wall

brackets. The brackets can be fixed only in reinforced points.

Caution: Swift recommend that the awning be ground mounted only.

Side mounting brackets are supplied. But in inclement weather conditions may cause damage to the motorhome bodywork

Caution: The awning is a sun protection, please roll up your awning in case of rain, wind or snow.

Alternatively lower one side of your awning, so that water can flow away and assemble the tension rafter as shown in the figure (not included for all awning lengths).

Make sure that the awning perfectly rolls up: when it is, the red indicators on the front profile ends are no longer visible. A damaged fabric does not allow the awning to perfectly roll up. Never use the awning with a damaged canopy. Wash the canopy with Fiamma BRILL.

NOTE: In case of problems refer to the awning user manual or contact your dealer.

Suggestions for use and maintenance for the fabric of your awning.

Fiamma fabrics are made with PVC and Polyester layers and their properties can change in certain weather conditions.

For example, if you close the awning which has been opened in the sun for a long time, wrinkles can appear on the fabric.

In low temperature, the fabric becomes less pliable and there is a risk of cracks.

Please find here a list of some practical advice for the best and long lasting use of your awning:

1. Open and close the awning in normal condition of dampness and temperature (at night or in the morning) making sure the fabric has no sharp objects on it and is clean.
2. When closing the awning after a long period in the sun, wrinkles may appear and prevent the awning closing completely. In this case the security of the awning is not compromised, as the security winch will prevent accidental opening. If wrinkles appear re-open the awning and leave in the sun for some hours and the folds will disappear. Then of course you need to re-close the awning in normal conditions (see point 1).
3. Residual damp can cause spots on the fabric. If the awning has to be closed when the fabric is damp we suggest you re-open it as soon as possible to dry.
4. We suggest you avoid using the awning below freezing 0°C.
5. When closing the awning you should support the front bar.
6. Most of the dirt seen on the fabric will be superficial and can be cleaned with water and a cloth. Stubborn marks can be removed using a light detergent. Please do not use aggressive chemical substances and do not use high pressure cleaning tools.

CYCLE RACKS

The Swift Group allows the fitment of a two cycle rack to our motorhomes and we have made provision for fixing blocks for this purpose.

Due to the complex nature of a cycle rack, the different models available and the need to break into the habitation box (therefore, having a potential of a leak), we suggest this modification only be carried out by a competent person, ideally, a Swift Group dealer or Authorised Repairer.

Please be aware a cycle rack can not be fitted onto a model where there is a rear escape window. Contact your dealer for clarification if your van has a rear window.

TWIN LENSE REVERSE CAMERA SYSTEM

Depending on the specification of your motorhome, a reverse camera system may be installed. The system uses a pair of cameras mounted at high level on the rear of the motorhome, connected to an LCD screen which forms part of the rear view mirror, mounted on the windscreen. The two cameras give alternate views from the rear of the motorhome: A ‘close’ view, and a ‘long distance’ view.

The reverse camera system is powered whenever the vehicle engine is running.

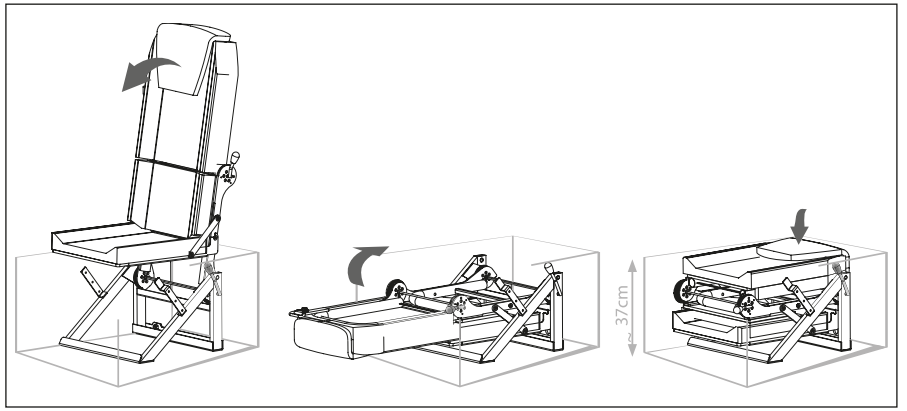
With the vehicle in neutral, or in a forward gear, it is possible to switch the screen ON (using the power button on the mirror), and then using the V1/V2 button on the mirror switch between the two different views.

When reverse gear is selected (with the engine running) the mirror will automatically switch on (if not already on), and will display the ‘close’ image.

SOLAR PANEL USE

All Swift Group products have the specific provision for the connection and use of a solar panel, even when the solar panel has not been factory fitted. Each Sargents PSU (fusebox) has a dedicated solar panel connection which allow the 12V feed from a panel to be connect to the leisure batteries.

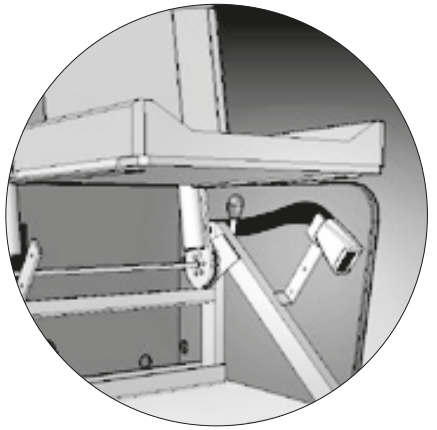
It should be noted that this connection is only designed for the use of a solar panel and has a maximum rating of 100W.



AGUTI FOLDING SEAT

The seat is foldable by using two levers mounted on the side of the seat.

1. After unfastening, please place the belt buckle into the provided fixture.
2. Activate the lower lever. The seat may no longer be strained! At the same time, the complete seat backrest can be folded forward.
3. Activate the upper level and fold the upper part of the backrest completely back.
4. Activate the lower lever and then fold the complete seat. The seating surface is brought automatically into the right position.



SEAT SWIVEL (DRIVER/PASSENGER)

To turn the swivel, slide the BLACK lever rearwards and adjust to the required angle. Before driving off ensure the locking mechanism is fully secure.

SIDE LOCKERS

Some models are provided with exterior access locker doors. These are suitable for storing external equipment.

BUNK AND LUTON BED SAFETY

Where the sleeping surface is over one metre above floor level the following notices apply.

WARNING: Always ensure safety boards are located before entering the bunk.

WARNING: Use upper bunks for sleeping only, with the provided protection against fall out in position.

WARNING: Care shall be taken against the risk of fall out when the upper bunks are being used by children, especially under 6 years of age, these bunks are not suitable for use by infants without supervision.

Layouts with an over-cab bed (luton bed), access may be restricted when the lower bed (model specific) is fully extended at night time.

TABLES

Note: The free standing table legs have a positive locking mechanism. Care must be taken to ensure that, when folded, the leg which is closed first locks into the second position.

When engaging legs in down position the mechanism must be positively locked down.

CAUTION! When erecting the free standing table, be careful to avoid trapping fingers.

TABLE STORAGE

Tables stored in the table storage compartment must be securely clipped into place whilst in transit.

To avoid damage care must be taken when removing tables from their stored position.

CARE OF LAMINATE TOPS, TABLES, FURNITURE AND DOORS

DO NOT use abrasives, chemically treated cloths or aggressive detergents as these may cause damage

DO NOT place hot objects on laminated surfaces i.e. tops, tables. Any temperatures 70°C and over will cause permanent damage.

Clean worktop surfaces, furniture and door fascias with a soft, slightly damp cloth, dry off with a soft cloth.

DROP DOWN TV MECHANISM

In some models, a drop down TV mechanism is used. Customers are reminded to engage both positive locks, on the underside of the TV mechanism before travelling. Failure to do so may result in damage of the TV unit or the TV shelf itself. The inner dimensions (i.e. maximum TV size) for this unit is 336mm high x 390mm wide x 70mm deep.

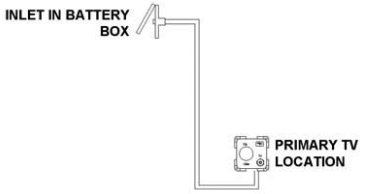
12V READING LAMP

Warning: 12v reading/spotlamps generate high temperatures when in use, the body, lens/bulb may become very hot.

Never make directional adjustment in the direction of flammable materials i.e. Curtains, nets or blinds.

TV INLET

Depending on specification, the motorhome may be fitted with an external co-ax connection in place of, or in addition to, connections for a roof mounted TV aerial. The external co-ax connection point will be within the battery box (Escape models) or the mains inlet enclosure (Sundance, E400, Borero and E500 models).

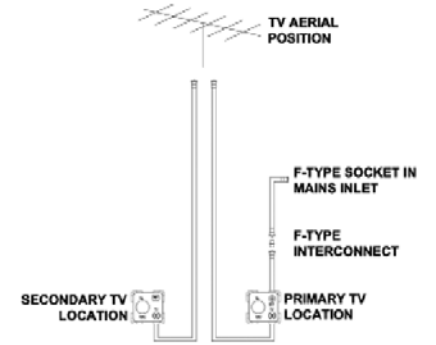


Co-ax connection within battery box

Within the battery box a White cover flap conceals a push-on type co-ax connection. A co-ax cable is fitted and connected within the motorhome from the back of this connection to the TV position within the motorhome.

An external TV aerial or site TV feed can be connected to the external connection point; signals from that connection will then be available at the TV position co-ax socket within the motorhome.

Co-ax connection point within the mains inlet enclosure



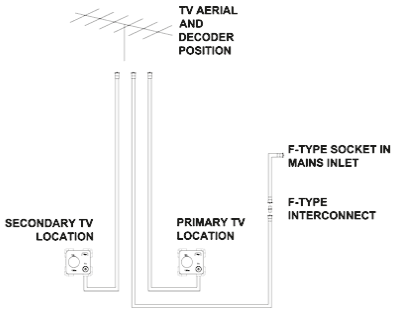
A short co-ax lead featuring a screw on co-ax connection will be present behind the Blue mains inlet connector. A co-ax cable will be fitted and connected within the motorhome, from the back of this connection, to the primary TV position within the motorhome. At the same time, further co-ax cable or cables will be fitted which route from a likely TV aerial position (i.e. within the wardrobe) to each of the TV positions within the motorhomes.

The primary TV position will feature a socket

marked 12v, TV, and SAT. The co-ax from the external connection point will route to the socket output marked SAT, whilst the co-ax from the wardrobe or similar will route to the socket output marked TV. At any secondary TV positions, if present, the co-ax from the wardrobe will route to the socket output marked TV.

An external TV aerial or site TV feed can be connected to the external connection point; signals from that connection will then be available at the primary TV position within the motorhome. As the connections are of the screw-on type, it is also possible to use this co-ax to route from an externally mounted satellite dish, to a satellite receiver.

Co-ax connection point within the mains inlet enclosure, Satellite decoder position within the motorhome. (Kon Tiki and E700)



A short co-ax lead featuring a screw on co-ax connection will be present behind the Blue mains inlet connector. A co-ax cable will be fitted and connected within the motorhome, from the back of this connection, to the location intended for the later fitment of a satellite decoder or similar receiver. At the same time, further co-ax cable or cables will be fitted which route from a likely TV aerial position (i.e. within the wardrobe) to each of the TV positions within the motorhome.

The external connection can be used to link a dish or external aerial, to the decoder / receiver position, and the co-ax leads from each TV point can then be used to link the decoder / receiver to each TV.

Depending on the type of decoder / receiver, it is possible that a modulator or similar component would be required to convert the output from the device (SCART or HDMI) into a signal that can be sent through co-ax cable.

SHOWER

When using the shower, always ensure that the shower door is fully closed thus avoiding

water spray on unprotected areas

TRIGGER SHOWER HEADS

- Squeeze trigger to release water. Release trigger to stop. Twist trigger up to gain permanent water flow, lower to stop.
- Care should be taken as water may become hot temporarily when switched on until it mixes and regulates.
- Small children should be surpervised at all times when using the shower.
- We recommend unfastening the trigger shower head before travelling and storing safely to prevent it becoming detached whilst travelling.

COLOUR REFERENCE

The colour code for touch ups or resprays for all white Fiat/Peugeot cabs and Swift coach built habitational body components is Fiat White 249. For silver cabs the colour reference is silver metallic 611. For Fiat/Peugeot cabs other than white, contact your Fiat/Peuget dealer or obtain a colour match.

Please be aware that colours can fade over time, and therefore, if the vehicle is more than a few years old, it is suggested a colour match be obtained.